The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

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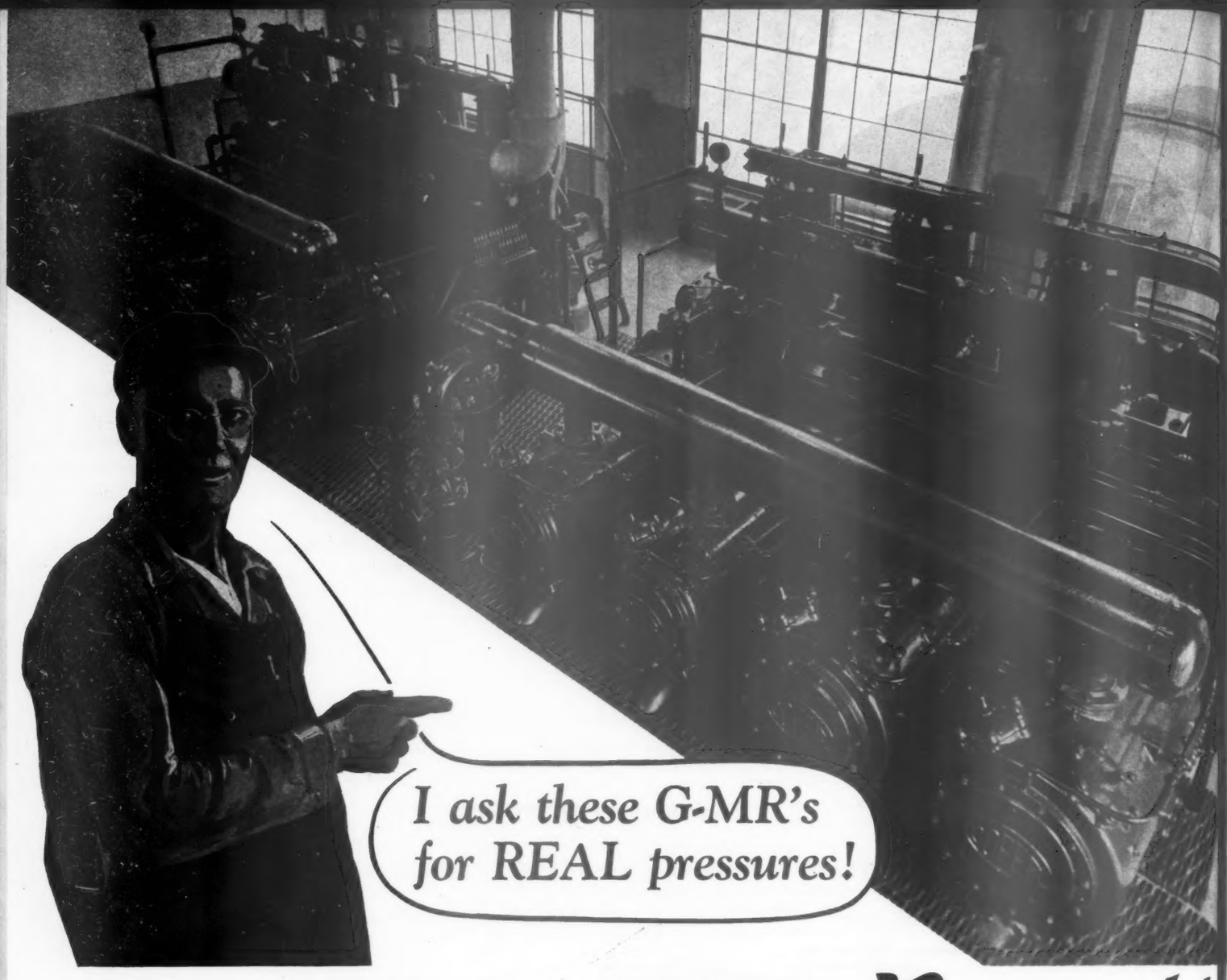

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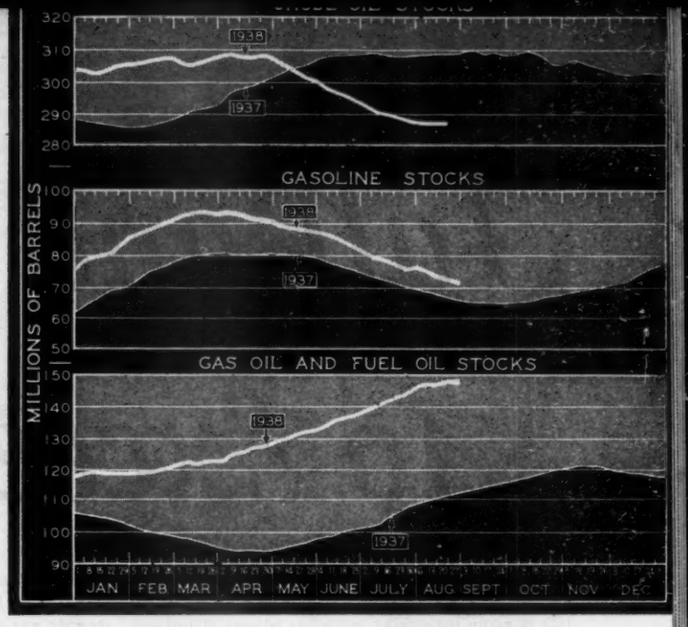
105 YEARS OF KEEPING PACE WITH INDUST

Trends

Reduction in Crude Output Correcting Weakness in Markets


GASOLINE STOCKS
GAS OIL AND FUEL OIL STOCKS
MILLIONS OF BARRELS
1938
1937
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

A REDUCTION of more than 40,000 barrels daily in crude oil production last week, which will be followed by a much larger decline this week, is eliminating many of the weak spots in crude markets. While the return to Saturday shutdowns in Texas started the first of the month, the month-end production adjustments for August, coupled with the fact that many operators spread the additional shutdown over several days, prevents full significance of the Texas curtailment from being known until the end of this week.

CRUDE PRODUCTION *3,353,991 barrels daily average—down 41,068. One year ago 3,678,252 barrels.*

CRUDE STOCKS *285,137,000 barrels as of August 20—down 1,114,000. One year ago—309,699,000 barrels.*

GASOLINE STOCKS *71,754,000 barrels as of August 27—down 955,000. One year ago—66,997,000 barrels.*

GAS AND FUEL OIL STOCKS *146,926,000 barrels as of August 27—down 254,000. One year ago—112,111,000 barrels.*

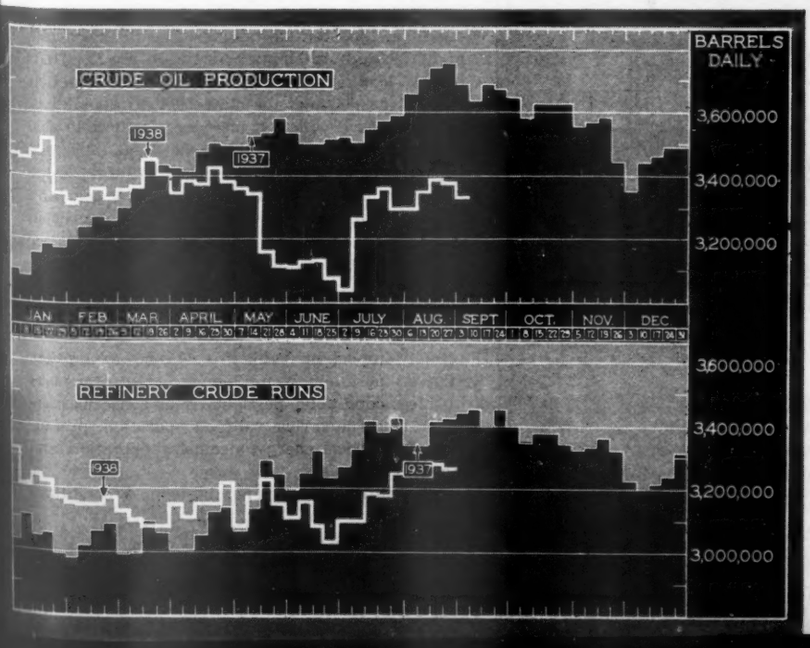
REFINERY RUNS *3,255,000 barrels daily week ending August 27—down 10,000. One year ago 3,425,000 barrels.*

(Later A.P.I. figures on refinery stocks and runs not available owing to Labor Day holiday.)

It is expected that Texas production this week will decline around 175,000 barrels daily. This will bring national output to approximately 3,200,000 barrels daily. So far as requirements are concerned this figure is more than 200,000 barrels less than the Bureau of Mines estimated demands. It appears, however, to be in line with needs of purchasers, including the smaller refiners. Several buyers are anxious to restrict their purchases so that they can further liquidate the crude inventories.

In Texas several companies have been buying more crude recently than they needed. A check made the first of the month indicated that this practice will end when the Saturday shutdown is made fully effective so that the situation in the Lone Star state will be more in balance than at any other time since early summer. Those in a position to know say there are local conditions in Louisiana, Illinois and some of the other states which need to be adjusted through reduced output, and attempts will be made to make the needed changes effective.

The sixth consecutive cut in Pennsylvania Grade crude oil, making total reductions of $1.14 to $1.24 per barrel, came as a surprise to many, in view of the recent improvement in the statistical position of lubricants and better prices for those products. It is contended that refinery revenue was still not in line with the crude costs, so the additional 12-cent cut was made effective. While improvement in the Pennsylvania situation is expected later in the year there are those who feel that due to changes in relative refining values, the Pennsylvania Grade crudes will not enjoy as wide a premium over Mid-Continent and other crudes as they did last year.



DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 3, 1938	Bur. Mines Sept. est.	Sept. state allowables	Aug. 27, 1938
Oklahoma City	95,925	.....	.....	96,775
Fitts	36,900	.....	.....	40,725
Remainder of State	299,575	.....	.....	299,550
Total Oklahoma	432,400	528,300	428,000	437,050
East Texas	440,787	.....	.....	441,200
West Texas	219,629	.....	.....	218,950
North Central Texas	104,736	.....	.....	105,548
Texas Panhandle	72,618	.....	.....	73,650
East Central Texas	96,539	.....	.....	96,750
Gulf Coast Texas	350,596	.....	.....	350,700
Southwest Texas	107,229	.....	.....	108,349
Total Texas	1,392,134	1,398,600	1,233,248	1,395,147
North Louisiana	78,845	.....	.....	79,150
Gulf Coast Louisiana	189,134	.....	.....	188,150
Total Louisiana	267,979	255,300	260,260	267,300
California	651,750	638,300	610,000	675,200
Kansas	161,200	168,000	165,000	165,375
Arkansas	56,920	53,700	.....	57,155
Illinois	71,160	49,000	.....	69,464
Michigan	49,698	57,000	.....	49,968
Eastern Fields	93,000	100,300	.....	93,600
New Mexico	106,880	111,600	106,000	107,010
Rocky Mountain area	70,870	84,200	.....	77,790
Total United States	3,353,991	3,444,300	.....	3,395,059

Trends in gasoline markets leave much to be desired so far as sellers are concerned. Prices have weakened in several refining centers due in part to the desire of refiners to liquidate the remainder of the gasoline accumulated for summer distribution. A change in price trends which would bring strength to the gasoline market this fall and winter, following a late summer decline, would not be without precedent. According to market students the continuance of crude production around present levels will be helpful in bringing about this development.

Fall and Winter Fuel

to Exceed 315,000,000

By H. STANLEY NORMAN

NEW YORK, Sept. 6.—Passing of Labor Day traditionally ends the heavy gasoline consuming season and with advent of fall the oil man's fancy turns to thoughts of fuel. Approach of the fall season is particularly welcome to the petroleum industry this year. Stocks of all fuel oils reached the all-time peak of 147,180,000 bbls. for the week ended August 20, according to A.P.I. estimates, compared to 111,781,000 bbls. at the same date last year.

The figures leave small wonder why the petroleum industry is particularly concerned with probable 1938-39 winter consumption of fuel oil and why it is appropriate to examine the prospects for demand. In this connection it is relevant to point out that stocks of gas oil and distillate fuels totaled 29,427,000 bbls. and that residuals made up the balance of 117,753,000 bbls. out of the high total of 147,180,000 bbls. By comparison the light fuel oil stocks totaled 25,131,000 bbls. on August 20, 1937, and residuals in storage on that date aggregated 85,616,000 bbls. The 1938 peak in heavy fuel oil storage appears to have been reached on August 20 for during the following week total stocks came down to 117,179,000 bbls., but the reduction was confined to the residuals, amounting to 254,000 bbls.

Thus with the burning season near, the petroleum industry enters the winter with roughly 30,000,000 bbls. of gas oil and distillates on hand and with nearly 147,000,000 bbls. of residual fuels in storage. Despite the fact that modern refinery trends are toward equipment which will yield a higher percentage of light products, it is nevertheless evident that residual fuels constitute the real problem. The light fuel oil stocks increased only about 12,000,000 bbls. from the end of last winter to the present while residual stocks have climbed more than 61,000,000 bbls. from the end of February to the middle of August. This sharp climb in stocks came about despite the fact that production during the first half of the year by U. S. refiners totaled 147,384,000 bbls., compared to 148,588,000 bbls. for the same six months in 1937.

Domestic Heating

An analysis of the oil burner situation indicates that about 78,240,000 bbls. of fuel will be required in domestic heating for the calendar year starting in September. Fuel oil consumption does not end with March, but so large a percentage is packed into the six months from October to the following spring that the summer months may be disregarded for practical purposes in appraising domestic heating requirements.

Oil burner shipments for the first six months of this year totaled 43,149 units in this country. It is estimated that sales through the end of September will increase the total to approximately 85,000 since January when there were approximately 1,548,100 units in service. Assuming that 18 per cent of the sales this year have been replacements, it is indicated that 1,617,800 units will be in service by October 1.

Unpredictable weather conditions will exert important influence on fuel oil consumption this winter as in the past, but requirements averaging 48 bbls. per unit are probable. An extension of the table originally prepared by R. T. Goodwin, of Shell Union Oil Co., New York, presented before the A.P.I. annual meeting last November in Chicago and reprinted in The Oil & Gas Journal, November 18, 1937, shows the sales, operation and heating-oil consumption of domestic oil burners in the United States. Mr. Goodwin calculated the consumption of distillate fuels for 1938 at 117,000,000 bbls. Through the end of June, the Bureau of Mines report showed domestic demand for gas oil and distillate fuels this year to have been 55,120,000 bbls., compared to 57,500,000 bbls. for the same period in 1937. Exports of this material totaling 15,582,000 bbls. for the first six months, however, were substantially higher than the aggregate of 13,538,000 bbls. shipped abroad in the first half of 1937, leaving 1938 at the mid-year with a deficit in total gas oil and distillate fuel oil demand of 336,000 bbls. Production increased from 68,450,000 bbls. the first half of 1937 to 72,835,000 bbls. the first half of this year. The yield from total crude run to stills for the first half was 12.7 per cent, compared to a year average of 12.39 per cent in 1937. During January, 1937, as a typical winter refining month, gas oil and distillate fuel production was more than 14 per cent of the crude run to stills.

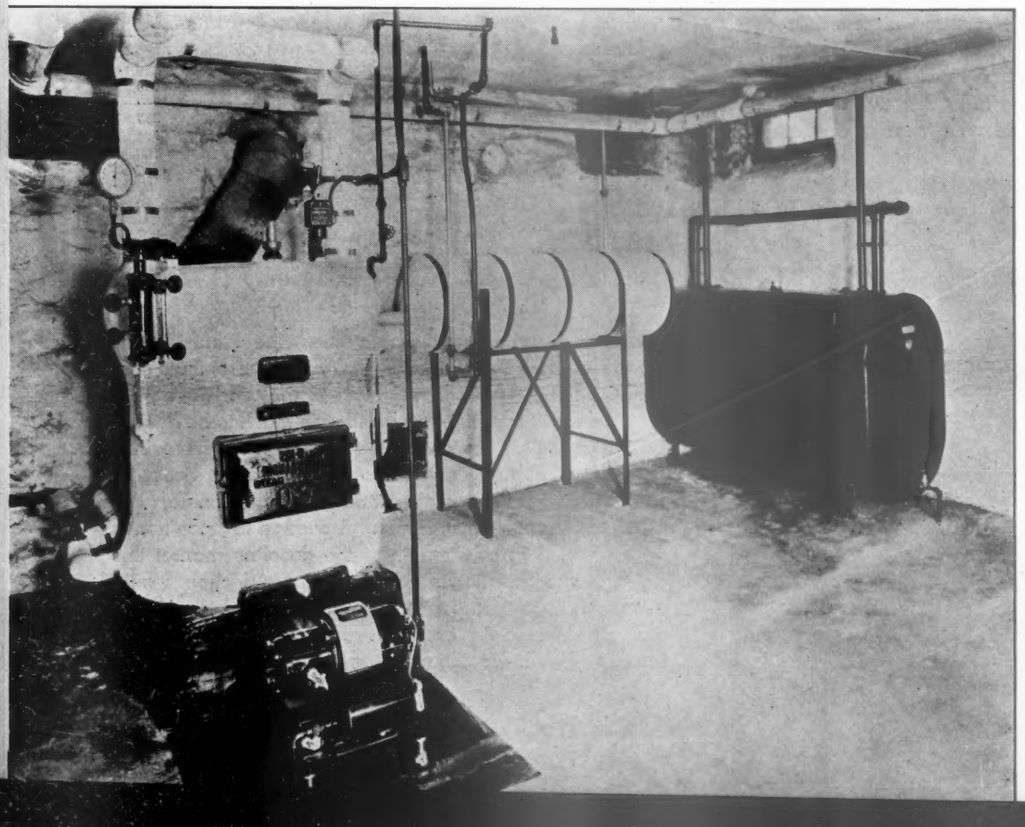
BREAKDOWN OF DEMAND

Consumption—	Light oil	Residual oil
Exports	25,000,000	8,000,000
Heating	50,000,000	25,000,000
Oil company fuel	5,000,000	20,000,000
Manufacturers	5,000,000	35,000,000
Gas and power prod.	2,500,000	17,500,000
Range oil	22,500,000	
Army and Navy	2,500,000	12,500,000
Steamships	5,000,000	45,000,000
Railroads	7,500,000	27,500,000
Total	125,000,000	190,500,000

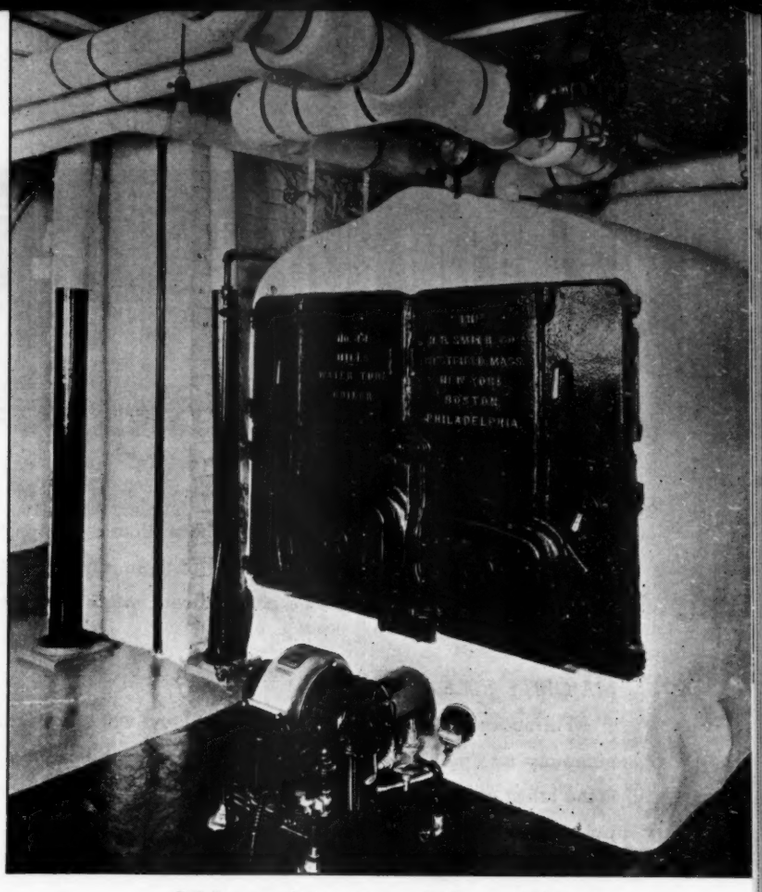
While severity of the coming winter is an extremely important factor in fuel oil consumption, an even more important element is that of general business conditions, particularly as concerns manufacturing industries, railroad operation, production of electrical energy, steamship operation, and similar enterprises.

The influence of general business conditions

A small residence steam installation

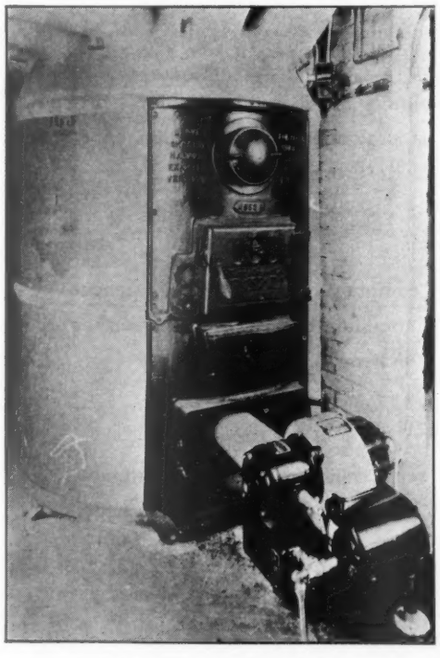


Oil Demand Barrels



Oil burner firing steam boiler and furnace

is particularly important in residual fuel oil consumption. During the first six months of this year, for example, domestic demand for heavy fuel oil slumped to 142,171,000 bbls., compared to 165,269,000 bbls. for the same period in 1937 which was considered a comparatively active period among manufacturing industries. This contraction of 23,098,000 bbls. in the domestic demand for heavy fuel oils during the first half threw a heavy burden



Burner in hot-air job

on refiners compelled to store greater quantities than desirable. The restricted demand will continue through most of September, but production of 1939 automobiles, greater freight car loadings transporting raw products to the factories and returning finished cars, higher rates of operation in steel mills and the winter upturn in heating requirements for apartments, office buildings, schools, churches, etc., are expected to combine and relieve this congestion.

In analysing the prospects for fuel oil consumption it must be remembered that industrial activity shrunk at an alarming rate during the final three months of 1937 and is just now showing first signs of revival. In this respect, last winter's residual fuel requirements hardly offer a basis of comparison with what may develop in 1938-39 assuming that the much talked about industrial revival develops.

Anticipation that export requirements for both light and heavy fuels will remain practically unchanged for remainder of 1938 appears justified. Insufficient information is available to predict what fuel oil exports will be during the first quarter of 1939, but meager advice obtainable indicates that this market will remain comparable to that of the early months this year. During the first three months of 1938, the gas oil and distillate fuel oil exports totaled 18,882,000 bbls. and heavy fuel shipments aggregated 3,301,000 bbls. Refiners can be reasonably secure in planning exportation of at least 33,000,000 bbls. of all grades of fuel oil during the next six months, carrying through March.

Rough estimates indicate the probable demand for about 125,000,000 bbls. of light fuel oils and approximately 190,500,000 bbls. of residuals during the six months from October 1, 1938, to March 31, 1939. A breakdown of the estimated requirements is shown in the accompanying table.

Range Oil Consumption

Range oil consumption amounting to slightly more than 30,000,000 bbls. in 1937 is due for another increase during the coming winter. Shipments of range type burners used in ranges, stoves, water heaters, space heaters and portable stoves for nine months of 1938 will total approximately 88,244 units. Making the 20 per cent allowance for replacement sales leaves a total of 1,432,478 units for service at the start of the winter. Some estimates consider the range burner unit consumption at 10 bbls. annually. In 1936 range oil consumption totaled 27,292,000 bbls. when there were 970,853 units in service. The average consumption of 10 bbls. per unit in service appears low because of the fact that much Diesel fuel falls in this classification. By no means all, but a majority of the annual consumption is packed into the six winter months, indicating that the estimated requirements of 22,500,000 bbls. for this class of burner user is not too liberal.

Distillate oil burner sales so far this year are lagging materially behind the record set in 1937 when a total of 466,726 such units were shipped from plants of manufacturers. Shipments totaling 60,305 units for the first six months of 1938 have been reported to the Bureau of the Census, but the monthly rate will be speeded up for remaining months of the year. In this connection, 1937 records show that nearly 25 per cent of the year's distillate burner shipments were recorded in the single month of October. Another important factor is the increasing popularity of the small, high-speed Diesel engine for a multitude of services ranging from auxiliary units in large factories to farm utilities. The spread of Diesel engines is almost equally impressive in the heavier duty service field including the modern, high-speed, streamlined passenger trains, in water craft, public transportation equipment and in generation of electricity. Fuel for the slower, more powerful Diesels falls in the general class of domestic heating oils and is, therefore, a factor worthy of consideration in appraising the outlook for No. 2 and No. 3 heating oil.

Since the 1937-38 burning season fuel oil specifications have been simplified to some extent by eliminating one grade completely, the type of oil formerly classified as No. 4. Fuel formerly classed as No. 4 was designed for use in burners requiring a low-viscosity oil with a flash point of 150, a minimum pourpoint of 15° F., a water and sediment tolerance of 1 per cent, an ash tolerance of 1/10 of 1 per cent and a maximum viscosity of 500 Saybolt at 100° F. Refiners and distributors of fuel oil are continuing their efforts to make further revisions to the ultimate goal of not more than three grades of fuel. Considerable caution, however, is observed in deviating from the recommendation of burner manufacturers.

Simplifying Burners

There has been much progress in simplifying burners and data show that 97 per cent of the units currently marketed and in service are of two types, the pressure and vertical rotary. The pressure type burner has succeeded in capturing nearly 90 per cent of the market. Progress is not entirely lacking in the matter of simplifying fuel requirements. Nearly 66 per cent of the burners installed during the past four or five years carry manufacturers' recommendations for operation on No. 3 fuel oil. Twenty per cent are recommended for service with either No. 1 or No. 2 fuel and some permit the purchaser an option of which of the two grades is to be burned. About 13 per cent of the burners call for No. 5 or No. 6 oil and here again certain manufacturers leave the question optional with the purchaser. Hardly more than one per cent of burners installed over the past five years required No. 4 oil accounting for deletion of that grade from fuel oil specifications.

SPARKS FROM THE NEWS

266 DRILLING WELLS

There were 266 wells drilling in southern Illinois last week —far more than in any other area. Most of them, due to shallow formations, will be completed as producers within a month.

MAJORITY RULE

Formation of a state association by employes of one Texas company for "mutual assistance against minority labor units" is the latest evidence that oil workers appreciate their enviable position as regards employment.

CONSISTENCY?

There are refiners liquidating gasoline storage to the last barrel this month regardless of price, who will start filling the same storage tanks in October for next year's business.

MORE OIL HEAT

While oil-burner sales have dropped off this year, there will be more in operation this fall and winter than ever before. The owners find them as essential as their cars.

JACKSON TREND DISCOVERY

A test now being completed indicates that production along the Jackson trend in Southwest Texas is to include Jim Hogg County.

BIRK CITY ACTIVITY

The Birk City pool, Kentucky's most important discovery this year, now has 43 producing oil wells averaging close to 100 barrels daily.

EXCESS GAS

A potential production of 383,750,000 feet daily with a maximum outlet of 50,000,000 feet summarizes the situation in the gas-naphtha area of Turner Valley, Canada.

REVERBERATIONS

Reverberations from Mexico's expropriation of oil properties are becoming increasingly embarrassing to official Washington, which first thought that it was a development of concern to the oil companies only.

GOOD RECORD

A decline of only 15 per cent in cash dividends by the Standard Oil group is an outstanding record for a depression year.

NO FAMINE

The report at the A.C.S. meeting in Milwaukee showing 75 per cent yields of oil from coal by hydrogenation answers those who fear an eventual oil famine in this country.

OBJECT LESSON

If the industry generally needs another example of what happens when there is prolonged overproduction, the sixth cut in Pennsylvania Grade furnishes it.

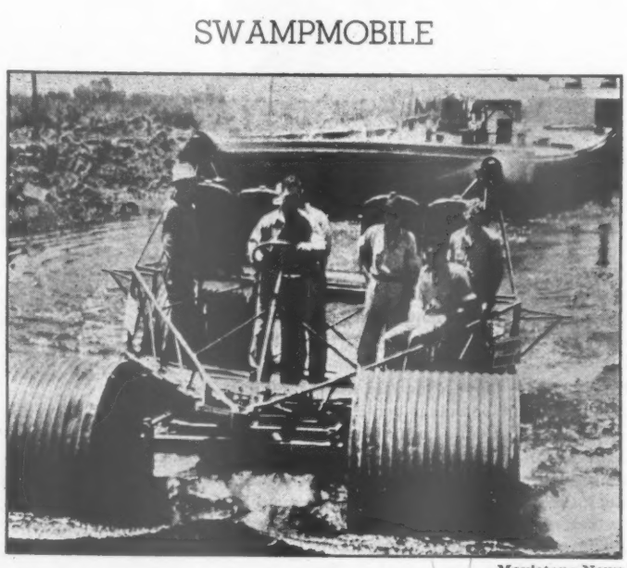
PURCHASE PLAN

A Mid-Continent company, inaugurating purchase of southern Illinois crude, outlines a plan which deserves co-operation of everyone concerned.

IT'S AN ILL WIND, ETC.

If the downward price trend for gasoline continues, the business of the red-ink manufacturers will jump anyway.

SWAMPMOBILE



Movietone News

Powered by two airplane motors it hauls barge loaded with oil field supplies in Louisiana marshes

Local Refineries Coming Into New Illinois Fields

A movement to localize the refining of a part of the oil produced in the new Illinois basin fields has begun. How far it will extend depends on the ability of independent refiners to capitalize plants to be built close to production. Already there are four small refineries located at favorable points, but according to news from large financial centers, efforts are being made by numerous other refiners, anxious to take advantage of Illinois' new crude supply, to raise investment capital or to obtain loans. They desire to get started in Illinois while the flush is still on in the field.

There are 16 refineries in the state, but few of them are patronizing the home product. Most of them run on Mid-Continent crude. When the plants were built there were no Illinois basin oil pools, and no thought that there ever would be.

The Shell Petroleum Corp. has a 43,000-bbl. plant in Wood River, Madison County, near St. Louis, and the Standard Oil Co. (Indiana) has a 40,000-bbl. plant in the same town. Both plants depend upon the Mid-Continent fields for their crude supply. The same may be said of the Texas Co.'s big 20,000-bbl. plant at Lockport, in Will County, about 25 miles southwest of Chicago. The Globe Oil & Refining Co. has a 16,000-bbl. plant at Lemont, in Cook County, also close to Chicago. Calumet Refining Co. has a 1,200-bbl. plant at Burnham, Cook County; Henry H. Cross Co. has a 1,000-bbl. plant at Colmar, in McDonough County, which is supplied by wells in the old Colmar and Plymouth pools, which fields date back to 1914. The same company has a 1,000-bbl. plant at Dupo, just south of East St. Louis, in a field that long antedates the present big development in the state, and a third plant of 2,000 bbls. capacity in Joliet, about 40 miles southwest of Chicago, and far removed from any Illinois oil field. The Socony-Vacuum Oil Co., Inc., has a 6,000-bbl. plant at East St. Louis, and the Red River Refining Co. has a 1,000-bbl. plant at Burnham.

Most of the refineries named are served by trunk pipe lines out of Kansas and Oklahoma. The present development in Illinois, thus far, has meant nothing to them in the way of crude supplies.

On the other hand, there are two large refineries in the old southeastern Illinois field at the gateway of the new basin development, and these have patronized the new fields to some extent and promise to do so in much larger degree. The Ohio Oil Co., which has production in the deep basin fields, has a 10,000-bbl. plant in Robinson, and the Indian Refining Co., a Texas Co. subsidiary, has a 16,000-bbl. plant at Lawrenceville. Both refineries are within 50 miles of the big producing fields in Richland and Clay counties, west of them. The Texas Co., like the Ohio Oil Co., is a producer of crude in the basin fields. The Texas Co. is now surveying a pipe line route from the Lake Centralia field, east of the city of Centralia in Marion County, to connect with its line in Richland County, which runs to the Lawrenceville plant.

GASOLINE YIELDS FROM A SAMPLE OF TYPICAL CENTRALIA CRUDE

	Light gasoline	Light naphtha	Total
Yield based on crude	18.9	16.1	35.0
Properties of gasolines:			
Gravity	76.4	53.1	64.7
Sulfur, percentage	.6806	.7665	.7212
Octane number	69	39	56
Endpoint	268	395	383

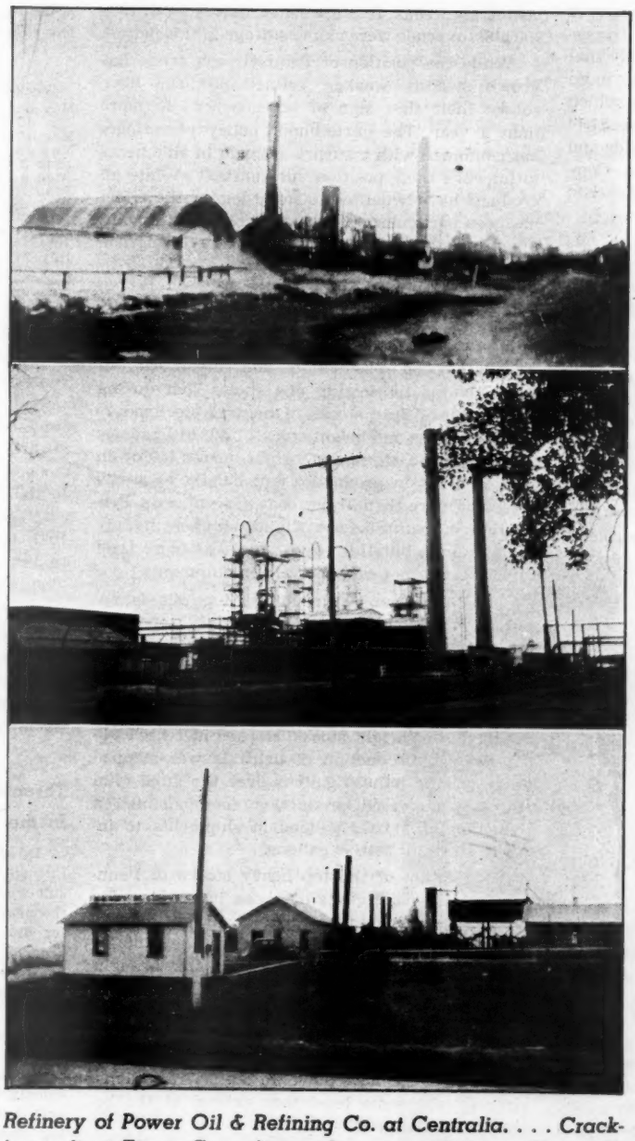
Since the opening of the Centralia field in Clinton and Marion counties, and the Louden field in Fayette County, north of Marion County, four refining companies have entered the field. The Centralia Refining Co., Power Oil & Refining Co., and Egyptian Refining Co. have built plants in the city of Centralia, each of 2,000 bbls. daily crude capacity, and these are running and buying oil produced in the Centralia field in competition with the Owensboro Corp., which is a Standard Oil Co. of Ohio subsidiary. Up in St. Elmo, Fayette County, the Allied Oil Corp. of Illinois is completing a 3,500-bbl. plant which will buy oil in competition with the Carter Oil Co. and the Owensboro Corp. Thus far these are the only plants in the heart of the new oil development, but there are others in sight if their promoters can finance them.

Most of the oil produced in the basin fields is being shipped out of the state, and thus far the pipe line capacity is insufficient to take care of all the production. Seeing an opportunity to get into the refining business in the very heart of the crude oil supply, small refiners with experience in other fields are putting on high-pressure campaigns to sell the idea to men with money to invest. Bankers and capitalists in St. Louis, Chicago and Tulsa have been approached by refinery men anxious to get established close to the source of supply, in a large gasoline consuming area.

The new Illinois oil comes from both sand and limestone sources. The largest production comes from the Benoist sand and McClosky lime.

Refiners operating in the Illinois basin, particularly those who are familiar with the increasing production of crude oil from the Benoist sand, are investigating the refining value of the crude produced from this formation. Tests on samples of the crude made by the Universal Oil Products Co. reveal a total recovery of 74 per cent gasoline if this oil is processed for its maximum gasoline content by natural distillation and if all remaining fractions are processed to make a maximum yield of gasoline by reforming, cracking, and polymerization coupled with vapor recovery.

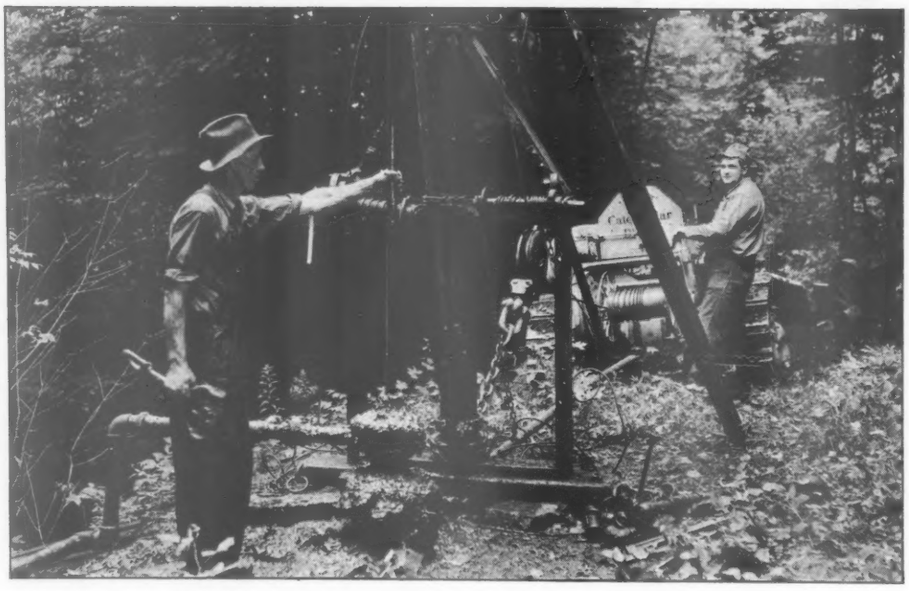
By straight distillation Centralia crude (from the Benoist sand) produces 35 per cent gasoline if two commercial straightrun cuts are taken. The combined fractions will have an octane value of 56. While this gasoline is about average in antiknock value, it has to be sold as third grade motor fuel unless it is blended with higher octane material.



Refinery of Power Oil & Refining Co. at Centralia. . . . Cracking unit at Texas Co. refinery, Lawrenceville. . . . Henry H. Cross refinery, Colmar

SIXTH CUT IN EASTERN OILS WITHIN A YEAR

By J. P. O'DONNELL



Servicing well in the Songbird district, Bradford field

OIL CITY, Pa., Sept. 5.—Prices of Pennsylvania Grade crude oil were reduced 12 cents per barrel on September 1, the sixth successive reduction in a period of a year and a day that brought them down to the lowest point in more than five years. The series of reductions, which began exactly a year ago, has reduced prices $1.14 per barrel in the Bradford and Allegany fields and $1.24 per barrel in the West Virginia fields. Comparative prices before the reduction began last September and at present follow:

District—	Aug. 30, 1937	Sept. 1, 1938
Bradford-Allegany	$2.82	$1.68
Middle district	2.77-82	1.56-61
Southwest Pennsylvania	2.57	1.34
Southeast Ohio	2.37	1.18
West Virginia	2.52	1.28

This reduction was attributed to the same cause as previous ones, production in excess of refinery demand. Prices were reduced last on June 13. According to reports of the United States Bureau of Mines, stocks of Pennsylvania grade crude oil increased from 5,889,000 bbls. on June 11 to 6,180,000 bbls. on August 20, a gain of 291,000 bbls. A comparison of American Petroleum Institute estimates on production with National Petroleum Association reports on runs to stills for this 11-week period shows that production exceeded demand in nine of these weeks. The comparison follows:

Week ended—	Crude output	Refinery demand	Excess shortage
June 11	75,700	72,061	3,639
June 18	74,400	70,346	4,054
June 25	72,300	75,799	3,499
July 2	75,350	72,441	2,909
July 9	70,450	69,682	768
July 16	76,350	72,021	4,329
July 23	70,250	65,149	5,101
July 30	70,350	64,813	5,537
Aug. 6	75,750	64,931	10,819
Aug. 13	73,750	73,605	145
Aug. 20	69,750	76,234	6,484

The latest report of the National Petroleum Association on refinery, pipe line and tank farm stocks shows a total of 5,613,484 bbls. on July 31, 1938, an increase of 153,186 bbls. from June 30, and an increase of 1,295,713 bbls., or fully 30 per cent, since May 30, 1937, the low point of last year.

One factor in this decline has been the reduction in refinery requirements resulting, at least in part, from the enforced shutdown of Sinclair refinery at Wellsville, N. Y., one of the largest users of Pennsylvania crude, and the temporary shutdown of several other refineries. This factor was especially prominent in the last two weeks of July and the first week of August when runs to stills averaged less than 65,000 bbls. per day in contrast to an average of 72,058 bbls. in the preceding six weeks. It is estimated that close to 150,000 bbls. of crude were run to storage in this period.

While the position of Pennsylvania crude has grown steadily weaker, refined products have shown their first sign of improvement in more than a year. The curtailment policy of refiners has combined with a surprising gain in shipments to improve their position substantially. While all products have benefited to some degree, the effect has been particularly noticeable in lubricating oils, inventories of which have been on the downgrade for several months.

Stocks Decline

The monthly report of the National Petroleum Association on production and inventories of Pennsylvania lubricating oils shows that during the month of July stocks of neutrals declined 2,947,083 gallons and bright stocks, 3,598,019 gallons. The decline in storage of bright stocks is due in part to a cut in production but chiefly to an increase of more than 31 per cent in shipments. Production of neutrals was slightly higher in July than in June but this slight gain was more than offset by a 27 per cent increase in shipments.

This improvement in lubricating oils is apparently local, however, for the July report of the Western Petroleum Refiners' Association shows an increase in stocks and a decline in shipments of both neutral and bright stocks for the Mid-Continent area. Despite a drop of 18.5 per cent in production of bright stocks, storage increased 64,344 gallons. Production of neutrals was stepped up seasonally 387,030 gallons over the June total and this increased production complemented a reduction of 214,872 gallons in shipments to increase stock by 744,450 gallons.

Liquidation of the top heavy stocks of Pennsylvania lubricating oils has been in progress for several months. Inventories of bright stocks reached their peak on May 5 when they totaled 24,048,916 gallons. Steady withdrawals brought this total down to 16,672,108 gallons on August 25 when they reached the lowest point since the week ended December 9, 1937. Viscous neutral inventories reached their peak, 20,656,603 gallons, on June 2 and are now down to 16,160,775 gallons. virtually the same level that existed at the beginning of the year.

How stocks of Pennsylvania lubricating oils have been affected by greater demand and lower production in the past four months is revealed in the following table:

Week ended—	Bright stocks	Viscous neutral
May 5	24,048,916	19,037,242
May 12	23,766,567	19,334,396
May 19	23,794,261	19,655,506
May 26	23,432,071	20,208,600
June 2	22,396,326	20,656,603
June 9	23,224,249	20,265,614
June 16	23,204,893	19,504,515
June 23	23,032,299	19,628,125
June 30	22,651,641	20,078,107
July 7	21,783,519	17,864,229
July 14	20,968,438	17,613,550
July 21	19,881,528	17,690,325
July 28	19,463,610	17,517,774
Aug. 4	18,494,957	17,139,562
Aug. 11	17,603,797	16,929,320
Aug. 18	17,503,208	16,524,860
Aug. 25	16,672,108	16,160,755

Despite this pronounced improvement, inventories of Pennsylvania lubricating oils are still well above those of last year. Inventories of bright stocks on August 25 this year contrasted with 12,818,479 gallons on August 26, 1937, and current stocks of neutral with 15,412,460 gallons on August 26, 1937. Stocks then were also high as a comparison with a low of 9,470,391 gallons on February 11, 1937, for neutrals and a low of 11,765,003 gallons on June 3, 1937, for bright stocks shows.

The reduction in lubricating oil inventories, however, has not been accompanied by a sustained increase in runs to stills and, therefore, has yet to be reflected in the demand for crude oil. However, runs to stills in the week ended August 25 were reported at 76,234 bbls., the highest level since the week ended May 21.

Threaten Suit on Shutdown In the Goldsmith Field

DALLAS, Tex.—L. C. Harrison, oil operator, through his attorney, Senator G. H. Nelson, said a suit would be filed in Travis County District Court in the near future against the Railroad Commission seeking dissolution of the Saturday and Sunday shutdown order.

Mr. Nelson said his client owned properties in the Goldsmith field of West Texas. He said suit would seek to show discrimination "with reference to the Saturday and Sunday shutdowns."

"We are not trying to destroy conservation or proration," he said. "We are only trying to be set on exactly the same plane as others—based on potential and cost of production. As long as wells are operating above the marginal production, we shall ask to set aside the shutdowns."

He did not say when the suit would be filed.

Development Starts in Shreveport Pool

By GEORGE WEBER

SHREVEPORT, La., Sept. 5.—The new Shreveport oil field, subject of much recent discussion, is shortly to get its initial development. Drilling activity in the immediate area surrounding the discovery well has been delayed several weeks pending settlement of plans for developing the prospect. A temporary spacing rule has now been announced, however, and permits are being granted for the drilling of several tests in offset, outpost, and wildcat locations.

With the information derived from the Lisbon field, some impression of the economics of developing the Shreveport field may be gained. Although the price of oil is not fixed at this time, it probably will not exceed $1 per barrel. On this basis the profit and loss to be expected with various spacing programs may be estimated.

From authority on Pettit lime production, the estimated figure of 400 bbls. per acre-foot is not considered an extremely conservative recovery for the Shreveport field. Assuming an average thickness of 15 feet for the field, the economics of different spacing program may be outlined as follows:

10-Acre Spacing

Estimated total recoverable oil:		
15 × 400 × 10		60,000 bbls.
Estimated gross revenue:		
60,000 bbls. at $1 per barrel		$60,000.00
Expenditures:		
1 well at $45,000	$45,000.00	
One-eighth royalty	7,500.00	
Severance tax	5,775.00	
Lifting cost at 15 cents barrel	9,000.00	
Total expenditures		67,275.00
Loss		$7,275.00

20-Acre Spacing

Estimated total recoverable oil:		
15 × 400 × 20		120,000 bbls.
Estimated gross revenue:		
120,000 bbls. at $1 per barrel		$120,000.00
Expenditures:		
1 well at $45,000	$45,000.00	
One-eighth royalty	15,000.00	
Severance taxes	11,550.00	
Lifting cost at 15 cents barrel	18,000.00	
Est. total expenditures		89,550.00
Estimated profit		$30,450.00

40-Acre Spacing

Estimated total recoverable oil:		
15 × 400 × 40		240,000 bbls.
Estimated gross revenue:		
240,000 bbls. at $1 per barrel		$240,000.00
Expenditures:		
1 well at $45,000	$45,000.00	
One-eighth royalty	30,000.00	
Severance taxes	23,100.00	
Lifting cost at 15 cents barrel	36,000.00	
Est. total expenditures		134,100.00
Estimated profit		$105,900.00

It should be noted that the estimated expenditures do not include cost of leases, federal taxes, overhead, or interest.

The minimum production required to pay for the cost of drilling and production of a well in the Shreveport field, on this estimated basis, is 72,000 bbls., which is distributed as follows:

Gross Revenue

72,000 bbls. at $1 per barrel		$72,000.00
Expenditures.		
1 well at $45,000	$45,000.00	
One-eighth royalty	9,000.00	
Severance taxes	6,710.00	
Lifting costs at 15 cents barrel.	10,800.00	
Total expenditures		$71,510.00

Costs of wells drilled in the city limits, or on small tracts, would exceed the estimate shown above.

If the average per acre yield of oil is 6,000 bbls., it will require the drainage of 12 acres to break even on drilling a well in the field. Based on estimated yields per acre of from 5,000 to 12,000 bbls., the number of acres required to produce the total of 72,000 bbls. will be as follows:

Per acre yield—	No. acres required to produce 72,000 bbls.
5,000	14.4
6,000	12.0
7,000	10.3
8,000	9.0
9,000	8.0
10,000	7.2
11,000	6.6
12,000	6.0

The estimated ultimate recovery from the Lisbon field may not exceed 3,000 bbls. per acre as the average yield for the field. The corresponding estimate for the Rodessa field is 13,000 bbls. per acre. It is impossible to predict at this time the average per acre yield for Shreveport, but it seems certain that the production will be at least as high as Lisbon and lower than Rodessa, where the total thickness of saturated limestone is much higher than any found in the Pettit horizon.

In the area surrounding the discovery well of the Shreveport field, the reservoir condition with respect to free gas and water, either bottom-hole water or edge water, is not known at this time. If the reservoir follows the general characteristics of the Lisbon field, it is probable that water will either be absent or ineffective as a driving force in production of oil. In this event, the available energy for flowing the field is restricted to the gas in solution in the oil at the original reservoir pressure. This will make it imperative to produce the oil with a minimum gas-oil ratio so as to effectively utilize the pressure uniformly throughout the entire area.

The discovery horizon in the Allison well is what is known as the "Pettit zone," a porous oolitic limestone in the basal part of the Glen Rose formation. In the discovery well the zone was encountered at 5,546-5,620 feet, of which 14 feet is oil-saturated porous lime. In estimating the possible extent and character of the field, it is necessary to study the characteristics of the Pettit zone in more thickly drilled sections of North Louisiana.

The section has been cored in numerous wells in the district. It is productive of oil in the Lisbon field; it produces oil and gas in the Sligo field, and it is the pay sand of the Lake Bisteneau gas field. Other tests in the district have found it present, but lacking in porosity and incapable of serving as an oil or gas reservoir.

The possible size of the structure of the Shreveport field is indicated by the base of the anhydrite in three tests drilled in the vicinity: Allison No. 1 Ellerbee, Gulf Refining Co. No. 1 Hatcher and Empire Gas & Fuel Co. No. 1 Nicholson. According to the data from these three tests and from wells on the flanks of the Sligo and Elm Grove fields, the presence of a structure with the highest part within the city of Shreveport is indicated. The Gulf test, 5½ miles southwest of the Allison well, found the Pettit zone to be a hard dense limestone lacking in porosity.

The Pettit producing horizon is made up of porous limestone interbedded with thin discontinuous lenses of shale and hard nonporous limestone. The porous lime members are variable in character, and laterally probably grade into hard nonporous lime and shale. These characteristics are found to be true in the area where the Pettit zone has been extensively explored, and apparently are true in the area adjacent to Shreveport, as evidenced by Gulf No. 1 Hatcher and the wells drilled in the Blanchard area northwest of the city.

It is seen, therefore, that the Pettit zone production is not definitely related to structure, but is determined by the development of porosity in the zone brought about by environmental conditions during the deposition of the sediments. This fact makes it impossible to predict either the relationship of the productive area or the average thickness of saturated section.

Production at Lisbon

The Lisbon field of Claiborne and Lincoln parishes offers the greatest amount of information on productive history of the Pettit lime. The field was discovered late in 1936, and at present it comprises 265 producing wells, of which 86 are on artificial lift. Productive acreage totals 4,000 acres, and accumulated production per acre to date averages about 1,000 bbls. The average thickness of the producing lime is 12 feet, actual thickness ranging from 2½ to 20 feet in individual wells. The highest recovery from any individual lease in the field is 2,500 bbls. per acre to date. This lease was one of the earliest developed. At present 70 per cent of flowing and pumping wells are unable to make their allocated production. The average daily allowable per well is 54 bbls., and the variation among individual wells is from 18 to 89 bbls. daily.

Shreveport discovery well, R. E. Allison No. 1 Ellerbee

Barge loading dock near Charenton field, on Bayou Teche made famous by Longfellow's "Evangeline"

Shallow Sands Pay in

By NEIL WILLIAMS

HOUSTON, Tex., Sept. 5.—After a somewhat disappointing and uncertain exploration of the deeper productive horizons, the Charenton field, St. Marys Parish, coastal Louisiana, is finding a promising pay-off in shallow sands. In a district of fields in which drilling and production generally are thought of in terms of great depths, this development of shallow sands presents a striking contrast.

Production from these sands may not be as prolific as in some of the neighboring deeper fields, but the shallow levels at which it is found, absence of drilling difficulties, and low-cost operation make it especially attractive. Although the individual sands have lacked uniformity over the field, the presence of a succession of separate sands reduces the chances of failure, with the result that new wells are being brought in with almost routine frequency.

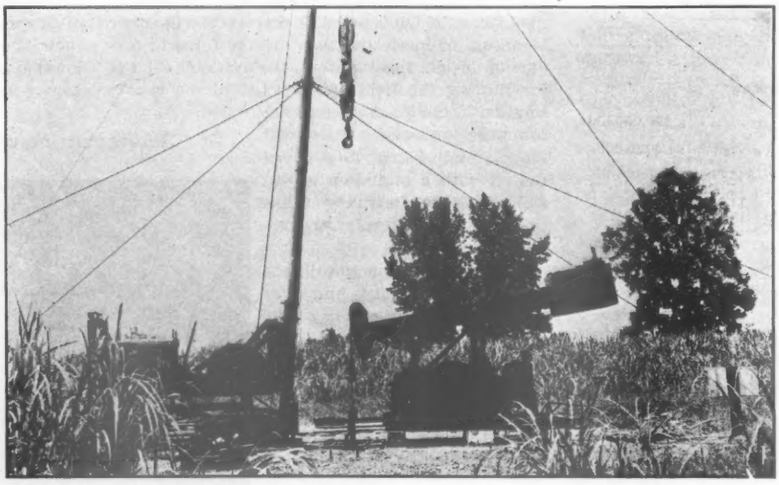
In the present shallow sand area, three main sand sections have been found productive so far. The shallowest is at 1,100 feet, where, as this is written, eight wells have been completed. One of these, however, has been deepened to a lower sand, leaving seven wells now producing in that horizon. The next main section is at 1,800-1,900 feet, where 11 wells have been completed. This section comprises what is believed to be three separate sands. The third level is at 2,600 feet, in which sand there are four wells.

Additional production at Charenton is being obtained from a 3,950-foot sand, in which one well has been brought in; a 5,000-foot sand, also having only one well; a 6,700-foot sand, having a single well; and at 7,200 feet a sand in which the discovery well of the field was completed and which since has yielded two more producers. Various other sands showing oil and gas, but in which no commercial production has been established, have been encountered in different wells.

Pan American Production Co. of Houston, Tex., owns the operating control of the major portion of the known productive acreage, and has been the principal developer. This company entered the picture shortly after the completion of the discovery well in September, 1936, when it acquired an undivided half interest in the block from Mike Hogg, Harry Hanszen and associates, who drilled the discovery well.

From the beginning, Charenton has been a puzzling proposition. Known as a structure, or possible deeply seated salt dome, of comparatively large extent, it has been found badly and complexly faulted and broken, particularly in the deeper formations, making exploration of the latter horizons treacherous.

The field is a short distance east of the town of Charenton, on Bayou Teche, about 10 miles north of Franklin. This area had been regarded as a prospect long before development was undertaken, its presence indicated by paraffin dirt beds, gas seeps and sulfur water. Paraffin dirt beds, north of the town and along the south shore of Grand Lake, a large inland coastal water body about a mile north of the field, are particularly pronounced. Many years ago a number of shallow tests were drilled along the south shore of Grand Lake on these indications.



Unusual setting for well. Shallow pumper in Charenton field. Rod-pulling machine standing by after well is returned to production

In 1929 and early 1930, Texas Co. and others did considerable torsion balance and shooting work in the area. Findings led Texas Co. to take a large block centering about 3 miles southeast of the present development. During 1930 a test, No. 1 South Coast Co., Section 41-14s-10e, was drilled by Texas Co. It was abandoned as dry at 7,851 feet.

Geophysical work in 1933 indicated the prospect as centering about 2 miles west of present development. A large block was leased by Ray Black, J. Brian Eby and associates as a result. One deep test was drilled on the Chetameche Indian Reservation, a government lease, in Section 34-13s-9e. Spudded in May, 1934, it was drilled to 8,501 feet, and abandoned as dry in February, 1935. The block covered a portion of the present picture.

Subsequent reflection shooting by Petty Exploration Co. for Mike Hogg and associates located the prospect as centering between the Texas Co. and the Black and associates blocks, overlapping portions of the latter block. After blocking the intervening acreage and deals with Black and associates for interests in portions of their acreage, Mike Hogg and associates, in July, 1936, started their first test, destined to become the discovery well, No. 1 Laws, Section 30-13s-10e, east of present shallow development.

After passing up several sands showing oil, the test was drilled to 7,208½ feet, where it was completed in September, 1936, flowing initially at the rate of 450 to 500 bbls. of 34.9-gravity oil daily through a five-sixteenths inch choke. Due to salt water encroachment, it shortly was reworked by the Hogg interests and recompleted in December at a plugged back depth of 7,203 feet. Since, because of water, the well has been given up by Pan American in that sand and plugged back to a sand passed at 2,000 feet. Altogether, this well recovered in excess of 40,000 bbls.

Taking over a half interest and operating control of the block, Pan American started a consistent exploration program to develop the 7,200-foot sand. Its first test, No. 2 Laws, 1,100 feet southwest of the discovery, proved a good well in that sand, and still is producing. Moving about 3,200 feet west of the discovery for No. 3 Laws, the company got a dry hole, carried to 8,858 feet. No. 4 Laws was located about 900 feet southwest of No. 2, or about 1,800 feet southwest of the discovery well. After being drilled to 10,066 feet without promising production it was plugged back to the 7,200-foot sand, where at 7,168-78 feet it was brought in as a gas well. Since, it has started to make oil.

In the meantime, Mike Hogg and associates, in an attempt of their own to prospect the area, drilled on a location in Bayou Teche, a state lease, about 12,500 feet southwest of the discovery well. This test was abandoned at 8,007 feet.

With a group of short term leases nearing ex-

n Charenton

piration, Pan American then was faced with the necessity of drilling a number of "step-out" exploratory tests to determine quickly the extent of the area. Contracted to the 7,200-foot sand, all these tests were drilled to that horizon or lower. Not only did they fail to uncover any showings of commercial importance in the 7,200-foot or lower sands but they revealed a complexly faulted structure which would make the development of additional production, if any, in those sands a treacher-out, and possibly costly, proposition. However, in the course of drilling these wells, and in subsequent exploration, the presence of the shallow sands became known.

In the first step-out test, No. 1 South Coast Co., about 2,300 feet southeast of the discovery, the 5,000-foot sand was found. Drilled to 8,503 feet, it was plugged back and completed, in July, 1937, at 4,982-5,005 feet, as the discovery well, and, so far, only producer in that sand. Nos. 2 and 3 South Coast, both within a few hundred feet of No. 1, have been drilled since without production. No. 2 went to 7,228 feet and No. 3 to 8,446 feet.

Another step-out test, No. 1 Veeder-Hunt, 1,000 feet north of the first South Coast Co. well, and almost due east of the discovery well of the field, made a small producer at 3,940-48 feet, after plugging back from total depth of 7,327 feet. So far it is the only well in that sand. The Veeder-Hunt lease is owned jointly with Texas Co.

Saturated Sand

Drilling of No. 1 Veeder, another lease, 1,500 feet northeast of the original discovery well, revealed a saturated sand at 2,600 feet. After carrying the hole to 9,466 feet without production in the lower horizons, it was plugged back to 2,615 feet but without success. No additional drilling has been done on that side.

No. 1 Landry, drilled 3,200 feet northwest of the discovery, proved dry at 8,822 feet. No. 1 Dolph Parro, 5,400 feet southwest of the discovery, drilled to 7,746 feet, found a sand at 6,841-49 feet, to which it plugged back but tested salt water, and was abandoned. This lease and other acreage south and southeast of the field were released to Hogg and associates, who recently, as the 15 Oil Co., drilled a well on the strength of the Pan American showings, about 2,400 feet east of the Pan American test. It was carried to 8,000 feet, and plugged back to sand at 6,658-93 feet and completed flowing 132 bbls. daily through a 7/32-inch choke.

In a dilemma as to which way to turn, the company decided to drill No. 1-A Ecuer, approximately 4,600 feet west and slightly south of the 7,200-foot discovery. A dry hole (No. 3 Laws) had been drilled west of the discovery, but slightly north of a line from the Ecuer location through No. 2 Laws producer and the discovery. It also was intended as a 7,200-foot sand test, and was drilled to that level. Carried to 10,317 feet it still showed nothing of importance. An electrical coring survey indicated a 40-foot sand body at 2,620-60 feet, with saturation at 2,620-50 feet. The hole was plugged to 2,640 feet, and with 7-inch casing at 2,618 feet, it was completed last February flowing 389 bbls. in 24 hours through a quarter-inch choke as the discovery well of the 2,600-foot sand.

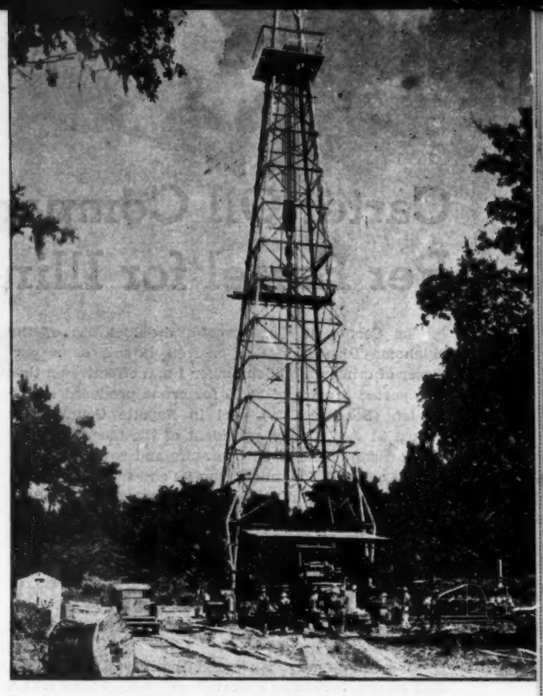
First Step-Out Well

Development of this sand then was undertaken. For the first step-out well, No. 1-B Ecuer was drilled 2,300 feet northwest of No. 1-A. It got the 2,600-foot sand without saturation, but a sand was found at 1,900 feet, and the hole plugged back to this. At 1,860-1,908 feet a small producer was made as the discovery well of this sand. This sand was faulted out in No. 1 Ecuer, the 2,600-foot sand discovery well. So far production in the 2,600-foot sand has been confined to four wells: No. 1-A Ecuer; No. 3 Robichaux, a northwest offset; No. 6 Laws, a northeast offset; and No. 8 Laws, approximately 500 feet farther northeast of No. 6.

First production for the 1,100-foot sand was opened in May by No. 6 Veeder, about 1,250 feet southeast of No. 1-B Ecuer, and about 1,600 feet north of No. 1-A Ecuer. Wells in this sand have been small pumpers, and it is possible the oil may be seepage from a lower sand, occasioned by the faulted formations.

A 3,000-foot northwesterly extension of the shallow sand area has just been made by Parish Drilling Co. in completion of No. 1 LeBlanc flowing 85 bbls. daily through a quarter-inch choke. Production is from the 1,100-foot sand. The hole previously had been drilled to 1,945 feet and failing to find production in the 1,900-foot sand, was plugged back. The same company also has drilled a south offset to this well on the Hertel tract. With this well, the shallow production extends about 6,000 feet from northwest to southeast, and is about 2,500 feet wide at widest. The most easterly wells at the south end are about 2,500 feet west of the nearest deep sand production.

Very little local structure is apparent in the shallow sands, and with the lack of consistency in the individual sands, the extent of the field cannot be determined readily. Development has been marked by irregularities. One sand may be present in one well and absent in another close by, or a well may be found high in one sand but without saturation in that sand, and still be able to produce from another sand. On this basis a dry hole may not define the field. Dry holes drilled, however, include one by T. E. Markley, 2,400 feet south of shallow production, going to a total depth of 3,000 feet. On the north end, Mike Hogg and associates got a dry hole in No. 1 LeBlanc, 2,500 feet northeast of the recent Parish extension well. Drilled to 3,000 feet it was as high as the Parish producer, and according to the rules of structure should have made a well, but the sand carried no saturation. Pan American also has drilled two dry holes, and Parish Drilling Co. one, northeast of production.



Light, unitized gasoline rig used in development of shallow sands

Test Each Sand

In the shallow sand development, all wells are started with a view toward deepening eventually to the 2,600-foot sand. With Pan American, the practice generally has been to test each sand as drilled rather than drill directly to the lower sands and test from bottom up by perforating casing. This has been due to low flowing pressures making plug back jobs unsatisfactory. Some wells have been flowing steadily without an ounce of pressure. Water is present in a number of wells but this is facilitating flowing and recovery. As each successive sand is exhausted the well will be deepened.

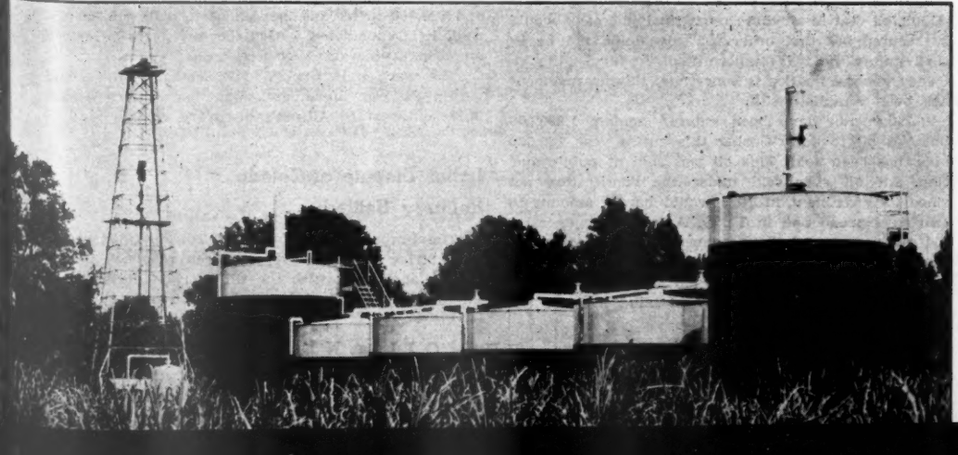
Pan American's shallow wells are contracted to Henry DeArman, drilling contractor, who is using a light, unitized gasoline rig, that can be skidded easily. Wells are being drilled and completed in from 10 days to two weeks with no attempt to push them. Sufficient time is allowed to core each well thoroughly so no possible sand may be missed.

Oil from the shallow sands runs about 21 gravity compared with the 35- to 36-gravity crude of the deep sands. Production is moved through a 4-inch line to barge loading docks on Bayou Teche, near the field.

In the deep sand area, the company continues to operate one rig, which now is on No. 9 Laws, a northwest diagonal offset to 15 Oil Co. No. 1 Parro, recently completed as the discovery well in the 6,700-foot sand, about 5,400 feet south of the original deep production.

Extensive sugar cane fields provide an interesting setting for most of the field, although portions of the field are in low, heavily wooded swamps, bordering Grand Lake, and subject to occasional overflows, especially during high water in the Atchafalaya River, which spreads out in numerous lakes and channels.

In the midst of the sugar cane. Tank battery and drilling well on lease of Pan American Producing Co. at Charenton



Carter Oil Company Posts $1.35 Per Barrel for Illinois Crude

The Carter Oil Co., through the facilities of the Oklahoma Pipe Line Co., entered Illinois as a purchaser of crude oil on September 1 and effective on that date posted a price of $1.35 for crude produced in the Louden (Beecher City) pool in Fayette County. On August 31 J. J. Conry, president of the Carter Oil Co., issued a statement to all operators and royalty owners in the Louden field, announcing its entrance as a buyer, its price per barrel, and setting forth its method of producing and purchasing and its plan of operation of its own wells. The statement follows:

"As we are committed to the principle of ratable taking we will purchase crude from the property of other operators who choose to sell to us upon the same basis as we take crude from our own properties in the field.

"We are greatly concerned that the Louden pool shall be developed and operated under conditions which will lead to the largest possible recovery from the pool, and in that larger recovery all royalty owners and operators, including ourselves, will share. To this end in the development and operation of our own properties we have already put into effect, or in the immediate future will put into effect, certain practices that will lead to the largest possible recovery from the pool for the common benefit of all persons interested therein.

"First of all, we have developed our properties on the basis of two wells to 40 acres, these to be located in the center of the diagonal ten-acre tracts in the forty. This practice alone will conserve the gas energy for larger production, prevent the escape of gas from solution, the most important agency in producing oil, and through the latitude of two wells to forty acres, located as here indicated, we will be able to put into operation other methods for larger recovery.

"In the second place, by long experience we have learned that where the wells in an oil pool are produced at their efficient rate, the eventual recovery very substantially will be larger. This practice we mean to put in force in the Louden field in both producing and taking oil from our own properties. To the extent that our development of the field has proceeded, our engineers are of the opinion that the efficient rate of production from a 40-acre tract is 40 bbls. per day when one well only has been drilled on the tract, and 80 bbls. per day from the forty when two or more wells have been drilled on the forty. By thus taking 80 bbls. from the two or more wells on the forty, there is latitude in taking more from one well than another within the 80-barrel limitation if a particular well will not produce its 40 bbls., or if one of the wells is producing at a low gas-oil ratio while the other or others are producing at high gas-oil ratios.

"The third method for enlarging recovery we mean to put into effect just as soon as the necessary equipment is installed to maintain the pressure of the producing formation by injecting residue gas into the formation. This not only will increase the propulsive force of the gas for producing purposes, but it will, to the extent possible, continue to hold the gas in solution with the oil, thus enlarging recovery.

"All of the methods for larger recovery that we have decided upon are of supreme importance when the low gas volume of the Louden field is taken into consideration. Emphasizing our intention to buy from others on a ratable basis, including our own properties in this respect, the conditions under which we will produce our own properties and buy oil from others may be thus stated:

"Where there is one well to a forty, we will either produce or buy therefrom 40 bbls. per day. Where there are two wells to a forty, we will produce or buy 80 bbls. per day from the forty. If there shall be more than two wells to a forty, we will buy 80 bbls. per day from the tract. In every case where there is more than one well to a forty, the operator may run to us such quantity per well as he wishes to, provided the total runs per day from the 40-acre tract do not exceed 80 bbls.

"If, upon further experimentation with our own wells, we shall find that the efficient rate of production should be more or less than 40 bbls. per well per day to be taken as above indicated, we will produce our own wells upon the basis of the revised figure and will buy from other operators in the field upon a similar basis. If our market outlet shall be so curtailed that the total of our production and purchases, produced at the efficient rate indicated in this statement, exceeds our market outlet, the reduction in market outlet will be distributed ratably between our properties and those of other operators who are selling to us.

"Owing to the low gas volume of the field, we regard the maintenance of pressure supremely important for larger recovery. We will assist any operator who may sell his production to us in maintaining pressure, the details of the particular arrangement to be worked out between us."

Interstate Compact Commission In Tulsa, September 29

The Interstate Oil Compact Commission will hold its next quarterly meeting September 29 in Tulsa, Art L. Walker, secretary, announced.

A special committee named at the Colorado Springs session to draft a resolution for continuing the compact will meet the day before. E. R. Sloan, of the Kansas Corporation Commission, is chairman of the committee to outline procedure for continuing the compact, the term of which expires in September, 1939.

Disposal of Confiscated Oil Causes Controversy

AUSTIN, Tex.—Disposal of confiscated oil has engaged the attention of state officials during the past week. It began with suits for confiscation of 400,000 bbls. of East Texas oil. General American Oil Co. was defendant in three suits and plaintiff in a suit to move 95,000 bbls. Premier Refining Co. was allowed to intervene in the confiscation proceeding on the statement by J. R. Parten of that company that it is interested in enforcement of the conservation laws and that sales are made at fair prices representative of market conditions. Sidney Latham, appearing for the Texas Petroleum Council, made a similar argument.

In 48 suits disposed of, a total of 3,472,000 bbls. of crude had been sold, Major Parten said, and brought only a little more than $900,000 and some 38 suits are pending affecting 1,500,000 to 2,000,000 bbls. He demanded competitive bidding and that the identity of the oil be preserved. He also declared that in some instances oil sold of one gravity was found to be much higher.

"Approximately 4,000,000 bbls. of confiscated oil sold at an average of 27 cents per barrel," Governor Allred said, "when other oil was selling for $1.35 per barrel. It was unfair to the legitimate operator and refiner paying the fair market price. I hope it does not occur again."

Attorney General McCraw, who alone can bring confiscation suits, said:

"Entirely unfounded are statements and intimations that the attorney general's department plans to dump on the market all existing illegal oil production through the confiscation act. The joint program stipulated that in all these cases final judgment would be secured but that orders of sale would not be issued unless the market permitted. So far as the attorney general's office is concerned, this arrangement has been complied with.

"Judgments have been entered against 1,300,000 bbls. of oil to date. During this entire year 100,000 bbls. has been sold. This oil was sold at public auction. All oil ever sold under the confiscation act since its enactment in 1935 would hardly amount to two days production in Texas. As attorney general I did not recommend the enactment of the confiscation law but despite its weakness I have endeavored to administer the law in complete harmony with the conservation plan of Texas. Bear in mind most of the confiscated oil has been subject to the deterioration of the weather and the accumulation of trash. It has not competed with fresh crude that sells at the top market price. Public sales have afforded the industry full opportunity to bid. If the prices have been low it was not because of lack of opportunity to buy on the part of any person who wished to do so."

F. W. Fisher, Tyler oil attorney, questioned the right of the state to delay confiscated oil sales on account of the market price of oil.

Mr. Fisher said that court decisions upholding the confiscation act made it clear that sheriff sales under the act convey a good title to the oil and suggested that persons afraid of price breaks might bid on oil that is sold.

"The confiscation act was intended to dispose of the oil, not to keep it," Mr. Fisher said.

The cases were transferred to the court of Judge Roy C. Archer, who said they would be reset for next Thursday.

Meanwhile, Tom Rowell, assistant attorney general, said 209,250 bbls. of confiscated East Texas oil would be sold at public auction in Tyler and Henderson, to the highest cash bidder.

Revisions in Effective Dates Of East Texas Price Change

A number of changes were made in the new posting dates for East Texas crude by several companies which purchase there. Following are the dates on which the new $1.25 per barrel was made effective:

American Liberty Pipe Line Co., August 29; Arkansas Fuel Co., August 30; Atlantic Petroleum & Purchasing Co., August 29; Bell General Pipe Line Co., August 29; Cities Service Oil Co., August 29; De Soto Pipe Line Co., August 29; East Texas Refining Co., August 20; Frontenac Oil Refining Co., August 30; Gulf Refining Co., August 29; Humble Oil & Refining Co., August 29; Longview Gathering Co., August 20; Magnolia Petroleum Co., September 1; Premier Oil & Refining Co., August 23; Stanolind Oil Purchasing Co., August 29; Shell Petroleum Corp., August 29; Sinclair Prairie Oil Marketing Co., August 30; Texas Co., August 30; Tide Water Associated Oil Co., August 30; Toronto Pipe Line Co., August 29; Sun Oil Co., September 2.

To Take 80 Per Cent of K.M.A. Five Days Allowable

WICHITA FALLS, Tex.—Texas Co. announced that under the new five-day week, September 5, it would take 80 per cent of the Railroad Commission allowable of 32 bbls. per day for wells in the K.M.A. pool.

Under the six-day week, the company was taking 75 per cent of the top allowable. Under the new rule it takes 25.60 bbls. per day from each well as against 24 bbls.

Gulf Oil Corp., which is connected to only a small number of wells, took the full Railroad Commission allowable for August.

Rodessa Oil Refining Co. Buys Shreveport Lease

SHREVEPORT, La.—The largest lease deal in the Shreveport area since R. E. Allison No. 1 Ellerbe was brought in near the Cross Lake spillway, was disclosed with recording of a lease by Walter B. Chandler and others to Rodessa Oil Refining Corp. (M. T. Grogan and others), of 120 acres for $30,000 cash and $90,000 in oil and agreement to drill a 6,000-foot well. It is understood a 6,000-foot test is to be drilled on each of the three 40-acre tracts.

The tract is in the SW NE Section 34-18-14, and within the city limits, and about three-quarters of a mile southeast of Allison's discovery well.

Labor Dispute at Toledo Refinery Settled

The Pure Oil Co. refinery at Toledo, Ohio, closed by a strike since May 13, has been reopened following an agreement with the Oil Workers union, similar to that which ended the Muskogee refinery strike.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Speed Warning

The question has been asked frequently recently as to the significance to the oil industry of business recovery, assuming that the improvement under way in recent weeks continues throughout the fall and winter months.

The main thing to keep in mind is that because the oil business is in an exceptional position in times of business recession, its reaction in periods of recovery differs from trends in other industries.

In the business recession of the past year, as in the prolonged depression which started in 1930, the oil business did not lose its markets as did other industries.

For example, despite the slump of 50 per cent in car production this year, the domestic consumption of gasoline has been running slightly in excess of the record demand of last year.

This fact, coupled with an exceptionally large gain in exports, has enabled the oil industry to enjoy a 3 per cent increase in demand for its principal product during the period when other industries have seen their consumer purchases drop from 25 per cent to as much as 75 per cent.

While this strong situation has permitted the oil industry to maintain its operations on a comparatively favorable basis, it also means that the industry, as far as gasoline sales are concerned, will not benefit greatly by a return to merely normal automotive production during the fall and winter.

Should there be a substantial increase in car sales, with the introduction of the 1939 models starting within the next two weeks, it should be remembered that this does not mean a similar gain in sales of gasoline.

The gasoline industry's response to increased car production is slow, and increased output over the next few months will have more significance in motor fuel sales in 1939 than for the remainder of this year.

There is a more direct tie-in with general business conditions in the sales of other petroleum products while sales of new oil burners for homes and other heating purposes have been substantially less than in 1937. More units will be in operation during the season which starts this month than ever before.

In this connection it is worthy of notice that light distillate fuel, used for heating and Diesel engines, occupies almost as depression-proof position as gasoline. This applies also to kerosene, which in addition to furnishing light for millions of users has found many new uses.

Unquestionably any upturn in general business will tend to widen this demand and enlarge the requirements for distillate fuels through the fall and winter season.

Improvement in general business, however, will have a much more pronounced reflection in regard to residual fuels. The decline of more than 15 per cent in the demand for heavier oils this year has been a direct reaction of the slump in business. Industry, railroads, marine and other consumers have used less fuel oil because of reduced activities. This reduction in demand explains the record stocks now on hand.

The demand for industrial lubricants also is influenced very closely by the same factors that affect the demand for industrial fuel oil.

Should the present recovery in general business prove to be sustained there is every reason to believe that current production and these heavy stocks can be absorbed because there is a demand for these oils under normal business conditions.

The oil business, moving along a comparatively level plain, escaping precipitous declines, will have no steep ascent in volume of business in the return to normal activity, and should order its operations accordingly.

Programs and Meetings

Final Program for N.P.A. Atlantic City Meeting

The final program for the thirty-sixth annual meeting of the National Petroleum Association at Hotel Traymore, Atlantic City, N. J., September 14, 15, and 16, follows:

September 14, 10:15 a.m. (daylight saving time).—Group Conferences: Department of Manufacture, Discussion of Stream Pollution Surveys; Department of Fire Prevention and Safety; Meeting Executive Committee.

2 p.m.—"Vice President's Address," N. H. Weber, vice president, National Petroleum Association.

Appointment of committee.

"The Development and Significance of American Trade Associations," Charles J. Brand, executive secretary and treasurer, National Fertilizer Association.

"The Inquiry Into American Business," Senator Joseph C. O'Mahoney, chairman, National Economic Committee.

"Propane Dewaxing and Deresining Pennsylvania Lube Oil Stocks," H. O. Forrest, J. T. Dickinson, and W. B. McCluer.

Report of Nominating Committee and election of trustees.

8 p.m.—Board of Trustees meeting.

September 15, 10 a.m.—Group Conferences: Department of Taxation.

"Difficulties Under Pipe Line Transportation Tax," J. R. Edmonston, assistant manager, tax department, Gulf Oil Corp.

"Practical Phases and Proposed Changes in Social Security Legislations," John E. Winslow, Shell Petroleum Corp.

"Present Trends in Taxation," L. H. Parker.

Department of Traffic and Transportation; Regulation of Private Carriers by Motor Truck; round table discussion of proposed federal and state regulations, led by J. F. Winchester, Standard Oil Co. of New Jersey.

2 p.m.—H. A. Logan, vice president, presiding.

Brief reports of association activities by M. C. Mallon, Harry S. Elkins, and Joseph E. Keller.

"Petroleum Economics and the General Business Situation," Joseph E. Pogue, economist.

"Some Washington Observations," Turner Catledge, New York Times.

"Business in America and Europe," Carle C. Conway, president, Continental Can Co.

6:30 p.m.—Fellowship banquet, Hotel Traymore.

September 16, 11 a.m.—Seaview breakfast. Members and their friends will be the guests of the Ethyl Gasoline Corp.

The Banquet and Entertainment Committee consists of: R. G. Sonneborn, chairman; John A. Britton, Jr., F. G. Bannerot, Jr., W. J. Curley, A. H. Irelan, K. M. Lyons, S. P. Worthington, H. W. Schmidt, J. M. Koch, H. H. Greene, W. S. Zehrung, M. C. Mallon.

The Reception Committee is composed of: Charles L. Suhr, John A. Beck, Paul G. Blazer, H. M. Carruth, Sheldon Clark, Earle M. Craig, Otto Koch, C. J. Leroux, H. R. Lewis, H. A. Logan, E. M. Lyons, A. W. Scott, C. S. Smith, Earl W. Webb, N. H. Weber, A. C. Woodman, R. A. Wotowitch, Harvey L. Chambers, Don Spanogle, E. R. Lederer, A. D. David, W. J. Anderton, W. V. Hartmann, W. H. Lamprecht, C. L. Fleming, Frank J. McGraw, Mark F. Cowden, C. V. Beaton, O. D. Robinson, W. Chalmer Burns, Paul H. Zook, J. H. Romer, P. H. Curry, A. M. Maxwell, A. E. Pew, Jr., H. G. Easton, D. E. Hoffman, Grant M. Lyons, George W. Campbell, Stewart M. Vockel, B. C. Graves, and W. E. Smith.

W.P.R.A. Technical Programs At Wichita and Shreveport

The programs for the regional technical meetings arranged by the manufacturing committee of the Western Petroleum Refiners Association at Wichita, Kans., September 29, and Shreveport, La., on October 28 have been announced by A. V. Bourque, secretary-treasurer of the refiners association.

On the Wichita program a discussion of the economies possible from reconditioning of valves, fittings, piping, and other equipment will open the meeting. The dollars-and-cents value of safety in refinery operations will be stressed in the second paper and the third will be a discussion of the economics of cracking to fuel oil versus cracking to coke.

In the Shreveport meeting Mid-Continent crude oils will be analyzed for their value as lubricants. Other subjects at the Shreveport meeting include furnace walls and arches and the demands made upon refiners for high-grade fuels by the modern automobile engine. The programs have been arranged under the direction of L. D. Mann, Cities Service Oil Co., chairman of the manufacturing committee. The programs:

September 29, Wichita, Allis Hotel:

Reclaiming Refinery Material, by E. R. Jones, Skelly Oil Co.

Safety Economics Pertaining to Refineries, by Henry W. Boggess, safety engineer, Sinclair Prairie Oil Co.

Cracking to Fuel Oil Versus Cracking to Coke, by George B. Murphy, Universal Oil Products Co.

October 28, Shreveport, Washington-Youree Hotel:

Furnace Walls and Arches, Ditrick Arch Co.

Modern Engines and the Demand on Refiners for Motor Fuels, by W. W. Scheumann, Cities Service Oil Co.

Lubricating Oils From Mid-Continent Crudes, author to be announced.

Oil Men Prominent on Program Of Management Congress

Prominent members of the petroleum industry are aiding in the preparation of the program for the seventh International Management Congress, the first to be held in America, at Washington, D. C., from September 19 to 23.

Representatives of petroleum interests on the advisory council are: Robert H. Colley, president, Atlantic Refining Co.; and Walter C. Teagle, chairman, Standard Oil Co. (New Jersey).

Frank W. Lovejoy, sales executive, Socony-Vacuum Oil Co., Inc., will preside at the technical session devoted to "Administration of Sales," Thursday morning, September 22, and P. G. Wharton, general auditor, Atlantic Refining Co., will preside at the technical session on "Office Management," at the same time.

Lawrence A. Appley, director of training, Socony-Vacuum Oil Co., Inc., will serve as rapporteur at the session on "Training, Vocational Guidance, and Applied Psychology" on Wednesday morning, September 21. Mr. Appley's paper will be entitled: "A Modern Executive Training Program at the Top"; Harry L. Wylie, assistant to the vice president and secretary, Pure Oil Co., will speak on "Adapting Office Procedures and Facilities to Administrative Requirements"; and Dr. Frank M. Surface, director of sales research, Standard Oil Co. of New Jersey, on "Distribution Cost Analysis."

CALENDAR

September

NATIONAL PETROLEUM ASSOCIATION, Atlantic City, N. J., Hotel Traymore, Sept. 14-16.

PACIFIC COAST GAS ASSOCIATION, Santa Barbara, Calif., Biltmore Hotel, Sept. 14-16.

NATIONAL INDUSTRIAL ADVERTISING ASSOCIATION, Cleveland, Ohio, Sept. 21-23.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, midyear meeting, under direction of West Texas Geological Society, El Paso, Tex., Sept. 27-Oct. 2.

INTERSTATE OIL COMPACT COMMISSION, quarterly meeting, Tulsa, Sept. 29.

October

NATIONAL LUBRICATING GREASE INSTITUTE, Chicago, Oct. 3-4.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, San Antonio, Tex., Oct. 5-7.

SOCIETY OF AUTOMOTIVE ENGINEERS, National Regional Fuels and Lubricants meeting, Tulsa, Oct. 6-7.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals Division, Knoxville, Tenn., Oct. 6-8.

NATIONAL BITUMINOUS CONFERENCE, sponsored by W.P.R.A. and Montana and Mississippi Highway Departments, Biloxi, Miss., Edgewater Beach Hotel, Oct. 10-13.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., Oct. 10-14.

NORTH AMERICAN GASOLINE TAX CONFERENCE, Tulsa, Oct. 10-14.

NATIONAL SAFETY CONGRESS, Chicago, Stevens Hotel, Oct. 10-14.

SOCIETY OF AUTOMOTIVE ENGINEERS, Aircraft Production meeting, Los Angeles, Ambassador Hotel, Oct. 13-15.

NATIONAL STRIPPER WELL ASSOCIATION, Tulsa, Oct. 18.

INDEPENDENT PETROLEUM ASSOCIATION, Tulsa, Oct. 19-21.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals and Petroleum Divisions, Los Angeles, Oct. 20-21.

NATIONAL ASSOCIATION OF CREDIT MEN, Petroleum Refiners Division, Indianapolis, Ind., Oct. 24-26.

NATIONAL PETROLEUM ASSOCIATION, Department of Fire and Accident Prevention, Olean, N. Y., Oct. 26.

MID-CONTINENT OIL AND GAS ASSOCIATION, Texas Division, San Antonio, Oct. 27-29.

November

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, regional meeting, Tucson, Ariz., Nov. 1-5.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Pacific Section, Los Angeles, Nov. 3-4.

AMERICAN PETROLEUM INSTITUTE, annual meeting, Chicago, Stevens Hotel, Nov. 14-18.

December

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, Dec. 5-9.

March, 1939

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, annual meeting, Oklahoma City, Okla., March 22-24.

New Ethyl Lead Blending Chart Explained at A.C.S. Meeting

MILWAUKEE, Wis., Sept. 7.—Leading petroleum chemists and operators have just closed two days of busy sessions as part of the general meeting held here this week by the American Chemical Society. The two days of meetings of the Petroleum Division have called for the discussion of an unusually broad range of subjects and these, together with those presented on Tuesday before the Division of Gas and Fuel Chemistry, clearly reveal the greater proportions chemistry is assuming in the operation of the petroleum industry. In a like manner, chemistry is being called upon to provide substitutes for petroleum (see page 56) but to date no substitute for crude petroleum has been found as an economical base.

Blending Chart

Turning to that portion of the papers which finds ready and practical application, the work reported done by L. E. Hebl, T. B. Rendel and F. L. Garton of Shell Petroleum Corp. is deriving and using an Ethyl fluid blending chart received considerable attention. The chart has been in use long enough to prove its practicability and regarding its use Mr. Rendel said:

"A large proportion of the gasoline used for both automotive and aviation fuel is treated with tetraethyl lead to improve the knock rating. The effectiveness of tetraethyl lead in improving different blending stocks varies considerably and for this reason a considerable amount of experimental work may be involved in the preparation of leaded gasolines. This work is expedited by the use of a chart so constructed that when the octane number of an ethylized gasoline is plotted against the amount of tetraethyl lead added, a straight line results. With such a chart the effectiveness of tetraethyl lead in different fuels can readily be compared in terms of the slope of the line obtained. This effectiveness of tetraethyl lead in a given fuel is called the 'lead susceptibility" of the fuel; it should not be confused with the term 'sensitivity,' which has been used to describe the variation of antiknock value with change in testing conditions."

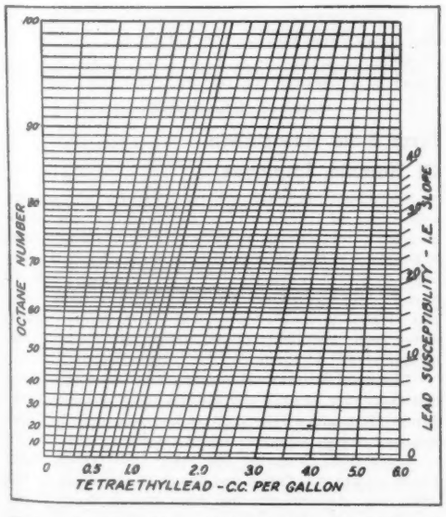
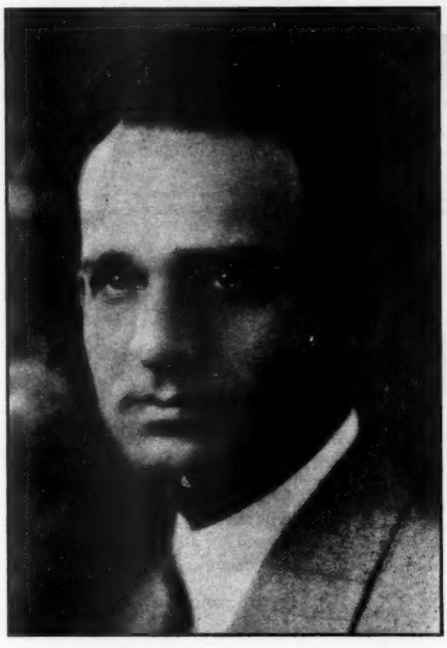

OCTANE NUMBER
TETRAETHYLLEAD - C.C. PER GALLON
LEAD SUSCEPTIBILITY - I.E. SLOPE
0 0.5 1.0 2.0 3.0 4.0 5.0 6.0
10 20 30 40 50 60 70 80 90 100
0 10 20 30 40

Fig. 1—Lead tetraethyl blending chart developed by Shell Petroleum at Wood River, Ill., research laboratories



Dr. J. C. Morrell, chairman of the Petroleum Division of the A.C.S.

In a previous paper[2] the octane number of an ethylized gasoline was shown to be affected by five factors:

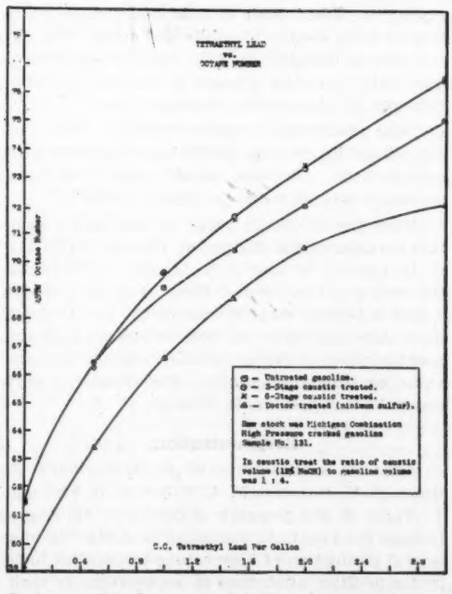
1. The effectiveness of iso-octane at different concentrations.
2. The effectiveness of tetraethyl lead at different concentrations.
3. The octane number of the base gasoline.
4. The lead susceptibility of the gasoline.
5. The number of cubic centimeters of tetraethyl lead added per gallon of gasoline.

These factors were incorporated in an ethyl blending chart which gave a linear interpolation between octane numbers and tetraethyl lead concentrations in any given base gasoline. The data on which that discussion was based were obtained by the "research method" and shortly thereafter the Cooperative Fuel Research Committee developed the modified test known as the "motor method" which was eventually accepted as the A.S.T.M. tentative standard knock test method. This change in the test method introduced new coefficients in the equations involving Factors 1 and 2 above the required corrections in the blending chart. Factors 3 and 4 were also influenced by the change in the test method, though this did not affect the blending chart. The increases in compression ratio at all concentrations lower than 6 ccs. per gallon were tabulated in terms of their ratio to the increase obtained by adding 6 ccs. per gallon. The relation of the values so obtained to the octane number was used for adjusting the slopes of the abscissae of the ethyl blending chart, the corrected chart being shown in Figure 1.

Lead Susceptibility

Frances G. Graves, of Standard Oil Co. of California, in discussing lead susceptibility, stated, "While previous investigators have concluded that the loss in knock rating of cracked gasolines during acid treatment is dependent upon their nature and source, data have been presented which show that this loss is a definite function of the initial knock rating for a given type of cracking operation. As the knock rating before treatment increases, the loss during treatment decreases to a point where there is no loss and beyond which an appreciation in octane number occurs during treatment. The knock rating of the gasoline before treatment is governed by the origin of the cracking stock.

"Although it has been recognized that lead susceptibility of gasolines is a function of their composition and sulfur content, definite numerical relations between lead susceptibility and sulfur content have been developed for straight run and cracked gasolines. Such relations are less definite for aromatic stocks. The relations have been presented in chart form and are an aid in estimating lead susceptibilities with reasonable accuracy for stocks on which lead, response data are lacking While sulfur-free aromatic compounds have a better lead susceptibility than olefins, their lead re-


TETRAETHYL LEAD vs. OCTANE NUMBER
C.C. Tetraethyl Lead Per Gallon
O — Untreated gasoline.
O — 3-Stage caustic treated.
A — 6-Stage caustic treated.
Δ — Doctor treated (minimum sulfur).
Base stock was Michigan Combination High Pressure cracked gasoline Sample No. 131.
In caustic treat the ratio of caustic volume (18% NaOH) to gasoline volume was 1 : 4.

Relationship between lead requirements and motor fuel octane number

sponse is more sensitive to the detrimental effect of sulfur compounds."

Concurring in the statements of previous speakers regarding lead susceptibility L. M. Henderson, W. B. Ross, and E. M. Ridgway, of Pure Oil Co., elaborated upon the effect of using various types of gasoline treating reagents and gave particular attention to the use of the doctor solution as compared with a caustic wash. Their conclusions were:

"Many observers have noted that the TEL susceptibility of gasoline stocks decreases to a greater or less extent on treatment with the conventional doctor solution and sulfur. This treatment is applied quite generally at present for the purpose of eliminating the odor due to certain mercaptans normally found in gasolines in relatively small amounts. This treatment converts substantially all mercaptans in the gasoline, malordorous as well as those without objectionable odor, into disulfides which remain in solution in the gasoline. A gasoline thus treated will pass the so-called doctor test. There is, however, a possibility that the doctor test is much more severe than is justified on a basis of intrinsic qualities of a gasoline.

"Experimental evidence shows that gasolines, when treated with sodium plumbite and sulfur, require more TEL to produce a given octane value than do those treated with caustic soda alone and similarly more than do those which were thoroughly scrubbed with caustic and subsequently treated with sodium plumbite and sulfur. The differences in quantity of TEL required are related qualitatively to the amount of mercaptan sulfur removed by the caustic washing.

"The decreased requirements of TEL accomplished by efficient scrubbing of gasoline with caustic soda solutions, would result in large economic savings to the petroleum industry."

With the economic value of the doctor solution brought under discussion, Charles Wirth III, C. D. Lowry, Jr. and J. R. Strong, of Universal Oil Products Co., offered their ideas in a report which indicated that the cost of the doctor treatment depended upon the cost of regenerating the spent solution as well as upon any change in octane value or lead susceptibility the treatment may cause the raw gasoline to undergo.

Polymerization

As one specialized form of polymerization S. F. Birch, A. E. Dunstan, F. A. Fidler, F. B. Pim and T. Tart, of the research department of Anglo-Iranian Oil Co., Ltd., discussed in detail the successful production of high octane isoparaffin fuels by the addition of olefines to isoparaffins. In their paper they considered the olefine-isoparaffin reaction in the presence of sulfuric acid, the effect of acid concentration, reaction temperature, ratio of reactants and the effect of the presence of normal paraffins. In a similar manner the isobutane-butene reaction was discussed.

Cracking

Accomplishing the direct opposite of a polymerization procedure, cracking came up for its proper share of the discussion. B. L. Evering, of Standard Oil Co. (Indiana), added materially to the understanding of cracking through his report on work done to produce free radicals by means of thermal decomposition. Most of the experiments were conducted on close cuts of petroleum as a source of free radicals but some work was done using butane.

The chemical reactions of cracked residues were reported by Charles L. Thomas, J. C. Morrell and Gustav Egloff, of Universal Oil Products Co., in which they offered the results of chlorinating these residues, followed by alkylation with aluminum, chloride and benzene.

German passenger bus equipped with cylinders of compressed gas

Hydrogenation

Turning from petroleum to coal for the moment, it should be mentioned that refinery chemists were interested in learning of the work of Dr. L. L. Hirst, C. O. Hawk, R. L. Boyer, P. L. Golden, I. I. Pinkel, J. R. Schaeffer, R. H. Kallenberger and Dr. H. H. Storch, of the Pittsburgh laboratories of the Bureau of Mines. These men reported that a 70 to 75 per cent yield of oil convertible to gasoline can be readily obtained from Pittsburgh seam coal by hydrogenation. They said:

"The essential chemical difference between bituminous coal and petroleum is that the ratio of the number of carbon atoms to that of hydrogen atoms is about 1.2 for the coal and 0.6 for petroleum, hence doubling the number of hydrogen atoms in bituminous coal should yield a material very similar to petroleum," Dr. Storch explained.

"There are usually two stages in the coal hydrogenation process. In the first or liquid phase stage, the powdered coal is mixed with a small amount—about one-tenth of a per cent—of a catalyst such as tin sulfide, and an equal weight of heavy oil, and this mixture is pumped into a converter at 850 degrees Fahrenheit along with hydrogen at about 3,000 pounds per square inch pressure.

"The products of this stage consist of a small amount of gasoline, a larger amount of a middle oil similar to kerosene in its boiling range, a heavy oil which is recycled to the start of the process for mixing with fresh coal, and a residue made up of the ash and the more resistant carbonaceous portions of the coal.

"In the second or vapor phase stage the middle oil from the first stage is vaporized and, along with hydrogen under pressure, is passed over a fixed catalyst such as tungsten disulfide. The product of this stage is gasoline."

Lubricants

The manufacture and testing of petroleum lubricants also consumed a large portion of the time and discussion at the meetings. One of the most interesting papers delivered involved the testing of grease. Prepared by Gus Kaufman, W. J. Finn and R. J. Harrington, of the Texas Co., the paper covered the use of a tiny instrument holding less than a thimbleful of lubricating grease which has been designed to measure the changes in consistency of the grease in very small bearings.

The miniature device consists simply of a very small cylinder to hold the grease and a very light aluminum plunger in place of the very heavy plunger in the accepted method. A unique feature of the design is that the cylinder is split into two halves permitting filling with grease with minimum air entrainment and softening.

In studies in lubrication one of the important criteria is the change in consistency. In the case of oils, the accepted method is by determining the viscosity and in greases by determining the depth of penetration with a plunger.

The accepted method for determining consistency of greases is that devised by the American Society for Testing Materials. However, this method requires that a relatively large quantity of lubricant be available for test, that is about a pint. On the other hand, where the lubricants are actually used such as in automobile wheel bearings, motor bearings, etc., less than a spoonful of grease remains on the bearing.

While the measurement of consistency of such a small sample is not difficult in the case of an oil which is fluid, it represents quite a problem in the case of a semi-solid material such as a lubricating grease, due to the fact that in attempting to fill a small holder with a semi-solid material, considerable air entrainment occurs, the lubricant is softened, and the plunger method is inaccurate.

To obtain the consistency change by the A.S.T.M. method which requires a pint of grease, studies would have to be limited in the case of ball and roller bearings to a bearing perhaps several feet in height in order to get enough grease from the bearing for a determination. However, by far the greatest number of bearings in use are rather small. The new miniature penetrometer has thus been of considerable help in studying grease lubrication problems.

References Cited

(1) This property of a gasoline has been referred to as 'lead responsiveness" by Trimble and Richardson, The Oil and Gas Journal, Volume 36, Page 130, March 31, 1938.

(2) Hebl, Rendel, and Garton, Industrial and Engineering Chemistry, Volume 25, Page 187, February, 1933.

Form State Association Of Humble Employes

HOUSTON, Tex.—A state association of employe federations of Humble Oil & Refining Co. was organized at a meeting of representatives of the various federations at the Rice Hotel here September 3. Twelve federations are represented in the initial organization. Karl L. Springer of the Baytown refinery federations was elected temporary president; I. Q. Miller, Gladewater, vice president; G. H. Stuart, Fairfield, secretary, and O. A. Rayburn, Taft, treasurer.

The association was organized to facilitate "mutual assistance against minority labor units and against duress from other sources." It will assemble and disseminate information on labor questions.

Federations included are the Gulf Coast, East Texas, Southwest Texas and North Texas units of the production department; the West Texas, North Texas and Panhandle, the Southern, East Texas, Southwest Texas and Ingleside and Harbor Island divisions of the pipe line department; and the Ingleside, and San Antonio and Baytown units of the refinery department.

Mexican Market for Our Trade Threatened by Oil Exports

By HENRY D. RALPH

WASHINGTON, D. C., Sept. 5.—Peaceful settlement of the Mexican oil controversy appeared more remote today as the State Department released the text of a note from the Mexican Government again denying an obligation to make compensation for expropriated agricultural lands.

The note, in reply to Secretary Hull's note of August 25, made no mention of the American oil properties, but reiterated the Mexican Government's position that it does not have to make full and immediate payment for properties expropriated. The note follows closely the speech made last week by President Cardenas.

While there was no official comment, observers in Washington concluded that Mexico is standing pat on its previously announced course, and that this leaves commercial relations between the two countries uncertain. Mexico is seen as advocating the abolition or practical emasculation of the principle of just compensation and the substitution of a doctrine of confiscation. The view here is that if no fixed principle of compensation is recognized there is no basis for working out a settlement, and the relationships between debtor and creditor become anomalous.

Although standing by its earlier rejection of arbitration, the Mexican Government has accepted Secretary Hull's alternative proposal that each nation appoint a commissioner to work with a third commissioner chosen from Washington representatives of other Latin American nations, but flatly refused the proposal that during the negotiations Mexico make regular payments into a fund to assure payment. Such a proposal, the note said, suggested a lack of faith in Mexico's intentions.

Mexican Argument

The whole tone of this latest note was an assertion of the right to seize property at will and without payment simply because Mexico has a law permitting this to be done, and an argument that international law, as modified by recent world events, recognizes this principle. The note expressed "regret" that the United States Government disregards the motives, causes and historical antecedents of the Mexican revolution, and insisted that because the expropriations "were inspired by legitimate causes and the aspirations of social justice they have not been considered unusual or contrary to international law." As a justification of this view Mexico cites devaluation of gold in various countries, not specifically naming the United States, which was upheld because national interests superceded individual claims, and quoted from recent constitutions of several countries passages which purport to put the national interest above the rights of individuals.

The Mexican Government flatly denies that international law recognizes the property rights of the individual, quoting authorities to support this position, and appears to be greatly disturbed over Secretary Hull's suggestion that American property holders be compensated regardless of how Mexico treats her own citizens. This suggestion is claimed to be in violation of the principle of equality of treatment of aliens as established in various agreements among Latin American nations. The note also announces that the program of land expropriations will continue and ends by quoting President Cardenas to the effect that discussions should be terminated before they disturb the friendly relations between the two countries.

Endanger U. S. Exports

A secondary aspect of the expropriation of American oil property by the Mexican Government is worrying administration officials fully as much as the immediate problem of attempting to secure compensation for American owners. This is the realization that Mexico's exports of oil, even though relatively small at present, are on a basis which threatens to eliminate the entire Mexican market for American manufactured goods.

Substantially all of Mexico's exports of petroleum to date have been to European countries and on a partial barter arrangement which means that the Mexican Government receives payment in foreign credit which it must use in purchasing from those European countries manufactured articles which it formerly obtained in the United States. If this process continues and expands, and this appears likely, it may seriously interfere with the administration's program of expanding exports and may mean a permanent loss of substantial export markets in Mexico. There is evidence the administration is fully aware of this situation and is greatly concerned over it.

It is officially reported that up to August 1 Davis & Co. have exported 2,332,960 bbls. of Mexican petroleum products, practically all of it going to Germany and Sweden, under a contract calling for a cash payment of 40 per cent and a materials credit of 60 per cent of the value of the products. This has already resulted in a cash payment to the Mexican Government of $1,000,000 and the establishment of materials credit of more than $1,500,000. In Germany Davis & Co. have opened a materials credit for the Mexican Government of 2,000,000 marks or about $800,000. None of the cash received by the Mexican Government under this contract has been used for the purchase of United States exports. If the Davis contract continues until the end of the year it will involve an additional $8,100,000, of which 40 per cent will be in cash and 60 per cent in credit, which will mean that the Mexican Government will be obliged to purchase in excess of $6,000,000 worth of supplies from Europe. Because of currency restrictions imposed by many countries, it is assumed that much of the cash payment will also be tied up with agreements for spending the money in the countries purchasing Mexican petroleum.

From an authoritative source it is learned that the Mexican Government hopes to export between 23,000,000 and 25,000,000 bbls. of petroleum and products annually with a value of approximately $40,000,000, and if this is done on a 60 per cent barter basis it will mean that Mexico will be required to purchase at least $24,000,000 worth of merchandise from the countries to which the petroleum was sold. American exporters of a great variety of products have been informed by Mexican purchasing agents that U. S. products can be used only if Mexican oil is taken in exchange. Due to the socialization program in Mexico, the Mexican Government itself is an extremely large purchaser of industrial equipment, machinery, and articles of all kinds. Thus a great variety of commodities heretofore imported from the United States in the future probably will be purchased in Europe.The cash obtained by the Mexican Government through the sale of oil products is badly needed for necessary expenditures within the country, and very little will be available for purchase of U. S. products.

Buying Abroad

On the strength of its contract with Davis & Co., it is learned that the Mexican Government is planning to purchase very substantial amounts of materials and equipment in Germany and Sweden, including approximately $2,000,000 worth of equipment for irrigation and hydroelectric projects, complete plants for the production of fertilizer, newsprint, and chemicals, railway equipment, agricultural machinery, highway apparatus, pipe, tinplate, and many other articles. Negotiations are now under way for the sale of Mexican oil to Italy in exchange for large quantities of rayon yarn, but the deal has not yet been closed because Italy wants to make it a 100 per cent barter arrangement without involving any cash payment. It is understood negotiations are also being conducted with Japan and that the Mexican Government may be willing to make a price which will permit Japan to send ships through the Panama Canal to load oil at Gulf ports at a saving under shipment from California.

It is also learned that Davis & Co. are seeking a contract with the Mexican Government to remodel three existing refineries and construct a new refinery in Mexico, and unless the Davis company could establish credit in the United States through the sale of oil here the refinery equipment would probably be purchased in Germany. If these refineries can be made to produce large quantities of high grade finished petroleum products, Mexico would be in a position to enter the Central and South American petroleum markets either on a cash or barter basis, and thus take a sizeable export market away from American oil companies.

American exports to Mexico during the first six months of 1938 were 36 per cent below the corresponding period in 1937, and practically all of this loss occurred after the oil expropriation in March. Part of this was due to increases in the Mexican tariff and part to unsettled economic conditions due to expropriation of the oil properties, but now the effects of the petroleum barter arrangements are being felt and it is realized in Washington that the severe decline in United States exports to Mexico in recent months has its background almost exclusively in the oil situation.

Cash Dividend Payments of Standard Oil Group Less

Cash dividend payments by the companies of the Standard Oil group for the third quarter of 1938 are estimated by Carl H. Pforzheimer & Co. at $25,427,903, a decline of 20.5 per cent from the total of $31,984,248 distributed by these companies during the third quarter of 1937. Aggregate cash disbursements of the group for the first three quarters of the current year will total approximately $129,602,779 compared with $152,418,486 in the first nine months of last year or a decline of 15 per cent.

The decrease recorded in the total of payments by the group in the current quarter and for the first nine months this year as compared with the similar periods last year principally reflects the absence this year of some of the special dividends which were paid in 1937 and smaller extra dividends and reduced payments by other members of the group.

Of the companies normally making payments in the third quarter, Standard Oil Co. of California, Standard Oil Co. of Indiana, Standard Oil Co. of Kentucky, South Penn Oil Co. and several of the pipe line companies are distributing less than at this time last year. Socony-Vacuum Oil Co., Humble Oil & Refining, Atlantic Refining, Standard Oil Co. of Ohio and Chesebrough Manufacturing Co. are among the companies which have paid or declared similar amounts to date this year as in the corresponding period of last year.

The record of quarterly disbursements in recent years follows:

	First quarter	Second quarter	Third quarter	Fourth quarter
1938	$23,550,943	$80,623,933	$25,427,903	.....
1937	25,437,708	94,996,530	31,984,248	$112,051,280
1936	19,872,088	74,817,051	29,911,506	114,399,982
1935	*18,122,737	63,821,486	17,653,161	70,516,298
1934	24,312,981	58,908,391	18,582,065	67,289,092
1933	32,406,332	34,527,547	19,546,576	42,457,920
1932	46,801,053	46,278,873	43,858,468	44,112,501
1931	63,101,797	57,843,467	51,263,688	48,530,230
1930	66,687,168	68,555,901	68,271,015	83,012,644
1929	63,101,701	66,053,389	65,426,981	75,063,856
1928	48,927,670	57,694,206	50,068,102	62,050,357
1927	55,373,413	54,291,615	47,728,440	55,724,472
1926	40,580,317	50,168,451	46,427,278	62,685,548
1925	34,355,618	41,905,728	35,140,584	42,104,169

*Does not include 1,399,345 shares of Mission Corp. distributed by Standard Oil Co. of New Jersey.

Standard of California declared for the current quarter an extra dividend of 10 cents per share in addition to the regular quarterly dividend of 25 cents per share. Equivalent payments were made in the preceding two quarters, while last year extras of 5 cents per share in the first and 20 cents per share each in the second and third quarters were paid. Standard of Indiana and Standard of Kentucky have paid only the regular dividend of 25 cents per share in each quarter this year. Last year, Indiana paid extras of 15 cents per share each in the first and second quarters and an extra of 25 cents per share in the third quarter, while Kentucky paid extras of 15 cents per share each in the second and third quarters of 1937.

South Penn Oil Co.'s declaration of only the regular quarterly dividend of 37½ cents a share for the third quarter compares with total payments of 50 cents per share each in the first and second quarters when extras of 12½ cents each were paid. Last year South Penn paid extras of 22½ cents, 37½ cents and 77½ cents per share, respectively, in the first, second and third quarters. Union Tank Car Co.'s quarterly payments of 30 cents per share in the last two quarters compare with 40 cents per share previously paid, while Buckeye Pipe Line Co.'s dividend of 25 cents per share this quarter compares with 50 cents per share in the preceding quarter, 75 cents per share in the first quarter and $1 per share in each of the first three quarters last year. Eureka Pipe Line also reduced its dividend this quarter, having declared a payment of 50 cents per share as compared with previous payments of $1 per share quarterly.

Standard Oil Co. of New Jersey, Imperial Oil, Ltd., International Petroleum Co., Ltd., and Creole Petroleum are among the companies on a semiannual dividend basis with payments in the second and fourth quarters which accounts for the substantially lower totals for the first and third quarters. With the exception of Standard Oil Co. of New Jersey, these companies made the same payments last June as the year before. Standard of New Jersey, however, paid an extra dividend of 50 cents per share in addition to the regular semiannual dividend of 50 cents per share in June this year as compared with extra dividends of 75 cents per share last year.

Obituaries

THOMAS H. PRATT, 78, general manager of Pratt-Hewitt Oil Co., Houston, Tex., died September 3. With Dr. W. E. Hewitt, he was one of the discoverers of the Refugio field. He moved to Houston in 1920 from Lincoln, Neb. He was born in Ireland, where he lived until he was 21 years old.

JASPER H. FISHER, for more than 25 years active head of the Fisher Governor Co., died in St. Joseph's Hospital, Orange City, Calif., where he had been a

JASPER H. FISHER

patient since April 1. He was born in Marshalltown, Iowa, September 6, 1878, being the son of William Fisher, founder of the Fisher Governor Co. He spent a number years in sales work before becoming associated with the company. Mr. Fisher was well known in the petroleum industry, where his company had pioneered many developments.

W. F. HOSLER, 78, chairman of the board of directors and former president of Buckeye Traction Ditcher Co., Findlay, Ohio, died recently.

EARL G. CRAIN, 49, vice president of Bovard & Seyfang, oil well supply manufacturers and head of Northern Oil Co. in Bradford, Pa., died September 1.

JOHN C. LOOKER, 84, died August 31 in Bradford, Pa. Formerly one of Pennsylvania's largest producers, he was chosen "Grand Old Man of the Oil Industry" at the sixth International Petroleum Exposition in Tulsa, in 1929. He started in the oil business in Bradford in 1880 and later operated leases near Tulsa. In 1928, he sold his Pennsylvania holdings to Petroleum Reclamation Co.

WILLIAM ELLSWORTH ADAMS, 72, died in Tulsa September 1. A native of West Virginia, he became interested in oil development as a young man. He followed oil through West Virginia, Pennsylvania, Ohio and moved to Tulsa in 1909 as superintendent for the Los Angeles-Cherokee Oil Co. In 1920, he became associated with Tidal Oil Co., and later superintendent for the Savoy Oil Co..

E. R. BLACK, 55, former superintendent of the Tulsa-Skiatook district of Sinclair Prairie Oil Co., died last week at Eureka Springs, Ark. He had spent most of his life in the oil country, joining White and Sinclair on June 1, 1911, at Osage Junction. He continued with Sinclair Oil & Gas Co. and with Sinclair Prairie. He was placed on the retired list a year ago.

CHARLES W. BAKER, 57, formerly active with several Tulsa oil companies, died September 1. He had been a resident of Tulsa for more than 20 years and had been associated with the Selby Oil Co., McMahon Oil Co., Southwestern Petroleum Corp. and the T. B. Slick interests. Previously he was in the oil business in Ohio.

Flow and Pressure Tests In Turner Valley Areas

CALGARY, Alberta.—A report prepared by the Alberta lands and mines department following systematic flow and pressure tests of the gas-naphtha areas of Turner Valley shows an aggregate potential open flow of around 383,750,000 feet daily. The available market demand for the Canadian Western Natural Gas, Light, Heat & Power Co. system which supplies Calgary, Lethbridge and other southern Alberta communities, averages about 20,000,000 feet a day with a winter peak of perhaps 55,000,000 feet. Approximately 5,000,000 feet a day of Turner Valley gas has been stored in the Bow Island field, while some gas is used directly in the field.

Injunction in LaBlanca Field Wild Well Case

HOUSTON, Tex.—An interlocutory injunction restraining five companies owning distillate producers in the LaBlanca field, Hidalgo County, from blowing residue gas into the air, was granted by District Judge J. D. Moore. The injunction was granted on the state's petition. The injunction was sought on the claim that the five companies had been producing gas, extracting the distillate and letting the residue into the air. The companies claimed they had to produce the distillate to protect themselves from drainage by a wild well which has been out of control since January.

THE MARKETS*

CRUDE OIL: *A reduction of 12 cents per barrel in Pennsylvania Grade crude was the sixth consecutive cut made effective over the past year. Conditions restricted to that area are largely responsible for cuts which now total $1.12 to $1.24 per barrel. New buying schedule of local refiner in southern Oklahoma involves reductions of 10 to 35 cents per barrel with largest reductions in lower-gravity grades.*

REFINERY: *Refinery gasoline prices lower where any changes are made. Natural gasolines slow in Mid-Continent. Eastern lubricants continue to improve with western oils firm. Good seasonal movement of furnace oils.*

TANK-WAGON AND POSTED DEALER: *Gasoline prices reduced at several points in Standard of Kentucky territory.*

FINANCIAL: *Trading in oil stocks inactive and several stocks 1 to 2 points lower. Average of 30 representative stocks for week ending September 3: High, 29.35; low, 28.01; close, 28.95. Week ending August 27: High, 30.61; low, 29.03; close, 29.23.*

**Detailed information in market section.*

STATE CAPITALS

TEXAS

THE RAILROAD COMMISSION will give a hearing on September 19 pertaining to the demand for crude oil in October, November and December, 1938, and for January, February and March, 1939.

All purchasers of oil within the state are notified to submit to the commission, in affidavit form, their nominations setting out their requirements for oil for the months of October, November and December, 1938, and January, February and March, 1939. These nominations are to be filed on or before September 10, and they shall be definite nominations of requirements for October, 1938, and as definite a forecast as is possible of requirements for November and December, 1938, and January, February and March of 1939. The oil nominated shall represent the daily average amount of oil in barrels to be produced for purchase from each field in the state.

At the same time, the commission will consider the question of the daily reasonable market for gas from the gas wells in the state with the view of prorating and regulating the daily gas well production from each common reservoir. Special consideration will be given to the method of ascertaining the demand for gas in the sour gas area of the West Panhandle field and in the East Panhandle field, which produces sweet gas only.

All purchasers of gas within the state are notified to submit to the commission in affidavit form their nominations for gas during the month of October, 1938.

ADDITIONAL TRACTS of Travis County school lands in Throckmorton County will be leased for oil and gas development soon, although the Travis County commissioners court has not yet set date for such bids. Travis County has some 14,339 acres in Throckmorton County still unleased.

THE FEDERAL TENDER BOARD in Tyler recently asked for mandatory injunctions against six East Texas oil companies and three operators, charged with failing to file monthly producers reports and with refusing to allow board employes to enter their properties. Defendant companies were Cordova Gathering System, Pennant Oil Co., Art Oil Co., Theron Oil Co., Beacon Oil & Refining Co., Octo Oil Co., W. B. Skeen, Dick Duncan and T. P. Cannon.

CALIFORNIA

UMPIRE J. R. PEMBERTON of California was obliged to absorb 13,900 bbls. of new production in his allocation of production for the month of September. During August there were 145 new wells and recompletions put on production. These wells showed an aggregate potential of 109,000 bbls. daily and received an allotment of 13,900 bbls. This 13,900 bbls. was prorated against the allotment of all fields and represented an average reduction of 2.27 per cent. The allotment for the month of September remained unchanged as it was the opinion of the Central Committee there was a possibility that consumption might hold up longer than expected. Operators in the Wilmington field have reduced the maximum permissible production of all wells from 500 bbls. per day to 400 bbls. daily, and operators in the Rosecrans field, where a number of excellent deep-zone wells have been completed during the past six months, agreed to reduce the permissible maximum production from 1,200 bbls. daily to a figure not to exceed 800 bbls. per day. Certain inside wells by agreement between operators have been beaned back to 300 bbls. per day. This constructive action has resulted in a lower production for both the Wilmington and Rosecrans fields and should aid curtailment.

ILLINOIS

GOV. HENRY HORNER, of Illinois, in answer to a question put to him on the subject of oil legislation, has replied by letter that "sometime Illinois will have conservation and regulatory laws pertaining to the oil fields, just as Illinois now has laws of like nature pertaining to the coal and other mineral fields." Continuing, the governor said:

"They will not only be fostered by the state administration, but they will be wholeheartedly fostered, even demanded, by the oil industry and oil land owners.

"Already there are complaints of flagrant discrimination by some pipe line companies against small producers in favor of large producers. Already there are complaints of waste, and the quick draining of wells because other wells are being drilled too close to them. Already there are complaints of market price slashes forced upon small producers under threat by buyers of refusal to accept their products.

"You may be assured, however, that as long as I am governor of Illinois every effort will be put forth to obtain fair legislation on the subject. Revenue for the state is a matter of secondary importance—since it is so small a matter in this case—but conservation of our resources and protection of the citizens of our state against reckless exploitation is all important."

He denied charges that the recent unsuccessful legislative efforts in Illinois were made to injure the industry.

KANSAS

THE HUGOTON GAS FIELD, in seven southwestern Kansas counties, was prorated as to production effective September 1. The Corporation Commission established an acreage-pressure-open-flow formula for allocation of the monthly allowable output.

Effective with September production, the field will be given an allowable each month, three-fourths to be allocated to wells on the basis of acreage times "observed pressure," and one-fourth on the basis of open flow potential.

The field, comprising 1,380,000 acres, produced for market an average of 2,104,845,000 feet a month during the first half of 1938, the commission found.

NEW MEXICO

OIL CONSERVATION COMMISSION of New Mexico has placed the allowable production of the fields of the state at 106,000 bbls. per day in September. The allocation to Lea County is 100,130 bbls.; to the Artesia arch area, which includes Artesia, Jackson and Maljamar, 4,525 bbls.; Hogback, 200 bbls.; Getty, 300 bbls.; Rattlesnake, 750 bbls.; Table Mesa, 85 bbls., and Aztec-Bloomfield 10 bbls., a total of 5,870 bbls. per day outside of Lea County. The top allowance per well in the state is 57 bbls. per day. The largest allowable in Lea County is to the Monument field, 26,434 bbls. per day. Eunice is allowed a production of 25,475 bbls. per day and Hobbs 15,385 bbls. per day.

State capitol, Little Rock, Ark.

Pipe Line Activity

Welding machine mounted on truck

Louisiana Standard Protests Valuation Set by I.C.C.

WASHINGTON, D. C.—Standard Oil Co. of Louisiana, successor to Standard Pipe Line Co., Inc., has protested to the Interstate Commerce Commission the commission's tentative valuation of its properties used for common carrier purposes.

The company contends that the commission erroneously excluded property and failed to allow cash for working capital in its valuation of the properties. Other objections to the report included failure by the commission to make proper allowance for engineering, general expenditures and interest during construction of the property and reproduction costs of physical property and depreciation.

Lance Creek-Glenrock Survey Has Been Completed

CASPER, Wyo.—Survey has been completed for Continental Oil Co. proposed $250,000 pipe line from the Lance Creek field to the company's refinery at Glenrock, Wyo., it has been announced by A. C. Wilkerson, superintendent. The line, 65 miles in length, will consist of 50 miles of 4-inch and 15 miles of 6-inch pipe and will be all-welded. Bids have been called on the laying of this line and it is expected that contract for the line will be let next week.

Work has been started on the Cheyenne-Denver link of Continental line connecting the Lance Creek field with the Continental and Bay Petroleum refineries in Denver, Colo.

Pacific Gas & Electric Company Completing Rio Vista System

LOS ANGELES, Calif.—Pacific Gas & Electric Co., through its subsidiary, San Joaquin Light & Power Co., is constructing 14 miles of 8-inch line from Merced to Livingston through Atwater, Calif. The line is being constructed by company forces, and will supply natural gas to both Livingston and Atwater. The route lies across level country. Single wrapping will be used with double wrapping in the localities where soil corrosion is severe.

Construction is soon to begin on 9 miles of 10-inch which Pacific Gas & Electric will have installed under contract. This line will parallel a 6-inch gas line now in use between Davis, Calif., and a point 9 miles to the south. It is one of the final sections in the Rio Vista project, which in all represents an expenditure of $1,000,000, approximately. Most of the project was completed about a year ago, but the new line has become necessary because of the great gas demand from the newly constructed Spreckels' Sugar plant north of Woodland. The Rio Vista project represents the building of a pipe line system to supply the towns north and east of the San Francisco Bay area with natural gas from the recently discovered Rio Vista field.

It is reported that the new 10-inch line will be constructed by Lindgren & Swinerton, Inc., of San Francisco as the general contractors while welding will be contracted by H. C. Price, Inc., of Bartlesville, Okla. The pipe will be wrapped at a rail point to resist corrosion, and the welded joints will be wrapped by field crews.

Panhandle Eastern Pressure Tests on Indianapolis Line

The Panhandle Eastern Pipe Line Co. has been making pressure tests of its line to Indianapolis that may guarantee an increase in the capacity of the line of 20 per cent when necessary.

The line was originally built to withstand a pressure of 500 pounds but the company has been loading it to carry only 350 to 400 pounds. At that pressure the line capacity is 180,000,000 feet. It will be tested to 550 pounds and will carry 500 pounds in an emergency which will step up the capacity to 210,000,000 feet daily. The market for this line has developed rapidly.

Line From Gillark Station To Cotton Valley Field

SHREVEPORT, La.—Atlas Pipe Line Co. of Shreveport is laying a 6-inch, 12-mile pipe line from its Gillark station to the Cotton Valley field. The line was laid to provide outlet and storage for oil on the Hunt Oil Co. lease, and the Atlas company is not entering the field as a purchaser.

Reconditioning of Wyoming Line Has Been Completed

Stanolind Pipe Line Co. has just completed reconditioning the line from Welch, Wyo., to the Teapot Dome Naval Reserve. Altogether the work took about a month and a half but most of it was done in August. Reconditioning done consisted of making general repairs which were not extensive.

Ponca City to Barnsdall Gasoline Line Completed

Kelly-Dempsey & Co., of Tulsa, have completed laying a 55-mile 6-inch welded gasoline line from Ponca City to Barnsdall, Okla., for Great Lakes Pipe Line Co. The job was completed in a record time of 28 days. H. C. Price Co. of Bartlesville did the welding.

Natural Gasoline

Building Compressor Station At Farmington, New Mexico

FORT WORTH, Tex.—New Mexico Gas Co. of Dallas, Tex., is building a 400-horsepower compressor station at Farmington, N. M.

Texas Commission Grants Permit for Repressuring Plant

The Texas Railroad Commission granted permission on September 3 to the Corpus Christi Corp. to process gas from the Stratton field of Nueces, Kleberg, and Jim Wells counties and return the residue gas to the horizon from which it is to be produced. The Corpus Christi Corp. has recently been organized by W. K. Warren, Clyde Alexander, and John Sherrin to operate properties acquired from John F. Camp.

Two Plants Proposed for Handling Illinois Gas

CENTRALIA, Ill.—Two and probably more natural gasoline plants are likely to be built in the Illinois basin area within the next two months if favorable action is taken on plans being drawn.

Carter Oil Co. has recently installed two 300-hp. angle-type compressors on its lease in Section 15-8n-3e in the Beecher City or Louden field in Illinois. These compressors will have a capacity of 1,250,000 feet of gas per day and can compress it to 700 pounds per square inch pressure. This will permit the recovery of approximately 2 gallons of gasoline per thousand feet of gas handled and the residue gas will go direct to input wells to assist in maintaining formation pressure now at about 675 pounds per square inch. This is the forerunner of a complete natural gasoline and pressure plant to be installed in this field where Carter Oil Co. has about 18,000 productive acres of leases.

The second large plant being proposed will be of the same type and will probably be located in Marion County. Tentative plans have been prepared by the Texas Co. for this plant and because of the company's large holding in the Salem pool the unit is likely to be placed somewhere in that pool. In all, the company controls 30,000 acres in this area.

Natural Gasoline Production in California Reported for July

California's natural gasoline production totaled 54,475,320 gallons in the month of July according to the San Francisco offices of the Bureau of Mines. The quantity of gas treated and gasoline production as reported by fields appears below:

NATURAL GASOLINE PLANT OPERATIONS

Field—	Gas treated (thous. cu.ft.)	Natural gasoline produced (gallons)
San Joaquin Valley:		
Belridge	2,989,951	1,829,483
Elk Hills	57,667	119,816
Kettleman Hills	9,074,630	14,821,817
Midway-Sunset	1,123,649	2,269,975
Mountain View	349,370	513,637
Miscellaneous	1,230,185	834,347
Coastal district:		
Elwood	595,760	793,014
Rincon	191,009	214,050
Santa Maria	132,946	405,266
Ventura Avenue	3,072,690	4,460,674
Miscellaneous	495,969	472,914
Los Angeles Basin:		
Brea-Olinda Coyote	500,984	1,318,290
Dominguez	1,664,954	2,818,596
El Segundo	390,162	635,749
Huntington Beach	1,254,392	3,660,255
Inglewood	273,427	389,171
Long Beach	2,380,606	8,487,020
Montebello	408,766	594,535
Richfield	290,743	579,755
Rosecrans	455,095	819,956
Santa Fe Springs	1,799,210	5,365,349
Seal Beach	456,637	612,285
Torrance	294,431	380,067
Miscellaneous	842,569	2,079,299
Total (all fields)	30,325,802	54,475,320

Distribution

	(Gallons)	(Gallons)
Stocks, beginning of month	2,039,533	
Production during month	54,475,320	
Delivered to refineries		53,610,780
Delivered to jobbers, brokers and blenders		638,840
Blended at plants for production of motor fuel		8,214
Losses		87,927
Stocks, end of month		2,169,112
Total	56,514,873	56,514,873

Liquefied petroleum gas production 2,184,024 gals. = 52,001 bbls.
Motor fuel produced 10,976 gals. = 261 bbls.

Note: Above data are incorporated in consolidated tabulation of refinery operations.

Refinery Expansion

Monthly Meeting of North Louisiana-Arkansas Refiners

The regular monthly technical meeting of the Ark-La-Tex Division of Western Petroleum Refiners Association will be held next Friday, September 9, in the Banquet Room of the Randolph Hotel, at El Dorado, Ark., beginning at 4 o'clock in the afternoon.

The special feature of this meeting will be a talk entitled, "Pressure Vessel Construction and Corrosion Resistant Linings," by A. R. McAllister, manager of the process equipment division of the Babcock & Wilcox Co., Barberton, Ohio.

J. K. Roberts Made Director of Research

Joseph K. Roberts, assistant to Bruce K. Brown, general manager of research and development of Standard Oil Co. of Indiana, has been promoted to director of research, President Edward G. Seubert announced today. Under Mr. Brown's direction, Mr. Roberts will supervise research activities at refineries at Whiting, Ind.; Wood River, Ill.; Sugar Creek, Mo.; Casper, Wyo., and Neodesha, Kans. Dr. F. W. Sullivan, Jr., who is at present director of research at Whiting, has resigned, effective October 15.

Mr. Roberts joined Standard Oil in 1928 as a chemical engineer at Whiting, after receiving his master's degree from the Massachusetts Institute of Technology and bachelor's degree from the University of Kentucky. He was promoted to assistant director of research at Whiting in 1934 and assistant to the general manager of research and development at Chicago in 1938.

Mr. Roberts is a member of the American Chemical Society and American Institute of Chemical Engineers.

Standard of Indiana Wins Suit in Detroit Market Case

DETROIT, Mich., Sept. 1.—Criminal prosecution of the Standard Oil Co. of Indiana on a charge of discriminating in the sale of gasoline to retailers in the Detroit area was voided today in an opinion handed down by Judge Arthur E. Gordon who heard the examination two weeks ago in Recorder's Court.

Standard was accused of granting tankcar prices to Ned's Auto Supply Co., a large retailer, through the sale of gasoline at such prices to the Merchant's Supply Co., which is owned and operated by the principal owner of Ned's. The prosecutor charged that this was a violation of the new State Fair Trade Law, since in effect it allowed Ned's to obtain gasoline at tankcar prices, 1½ cents cheaper than the tankwagon prices charged all other Standard Oil retailers.

The court held that this procedure was entirely within the law, and that therefore there was no basis for prosecution. Standard Oil executives had admitted on the witness stand that Ned's was favored with the lower gasoline price, but defended the practice as necessary to hold the account, said to be the largest in the city.

Small Skimming Plant Near Artesia Being Completed

FORT WORTH, Tex.—Construction of a 2,000-bbl. skimming plant in Eddy County, New Mexico, is nearing completion and the plant is expected to be placed in operation shortly. The plant is near the Artesia field and will take its crude from Artesia, Maljamar and other nearby small fields. The plant is to be operated by Errol C. Holt and Mack Hall of Dallas.

Natural Gas News

Natural Gas Department Opens A.G.A. Convention

The twentieth annual convention of the American Gas Association will be held October 10 to 13 in Atlantic City, N. J. Under the direction of George F. Mitchell, president of Peoples Gas Light & Coke Co., Chicago, chairman of the program committee, this year's speakers have been selected mostly from outside the gas industry. N. C. McGowen, president of United Gas Pipe Line Co., Houston, Tex., and this year's president of the American Gas Association, will preside.

Dr. E. R. Weidlein, director of Mellon Institute of Industrial Research, Pittsburgh, Pa., will talk on "The Aid of Research to Industry."

The convention will open with the Natural Gas Department program Monday morning, October 10. While this program is designed primarily along technological lines, it will include addresses designed to encourage continued cooperation with the petroleum industry, which basically has many problems that parallel those of the natural gas business. Reports of the Main Technical and Research Committee will be part of this program.

One of the high points of the natural gas sessions will be a paper on "Geophysical Methods of Exploration," by Dr. J. Brian Eby, consulting geophysicist of Houston, Tex. It will be of particular interest because it will be presented from the viewpoint of a geologist interested in geophysics rather than from a highly technical or mathematical angle.

The program of the Natural Gas Department follows:

October 10, 10 a.m.—Main Technical and Research Committee:

Presiding, Howell C. Cooper, chairman. Opening Remarks by chairman. Committee and subcommittee reports.

Geophysical Methods of Exploration, Dr. J. Brian Eby, consulting geophysicist, Houston, Tex.

Small Intermediate Compressor Stations as a Means to Increase Main Line Capacity, H. C. Wallace, chief engineer, Commonwealth Gas System, New York.

Main Technical and Research Committee Round-table Luncheon.

2 p.m.—Opening Remarks by Robert W. Hendee, chairman Natural Gas Department, general manager, Colorado Interstate Gas Co., Colorado Springs, Colo.

Why Not Eliminate the Waste? Elmer F. Schmidt, vice president, Lone Star Gas Co., Dallas, Tex.

Regulation of Interstate Natural Gas Pipe Lines, Clyde H. Seavey, acting chairman, Federal Power Commission, Washington, D. C.

Address: Gen. Baird H. Markham, director, American Petroleum Industries Committee.

Report of nominating committee, and election of officers.

Panhandle and Rodessa Gas Allowables Are Reduced

AUSTIN, Tex.—The Railroad Commission ordered a reduction of 20,185,000 feet daily in the allowable production of gas for September in the Panhandle and Rodessa fields.

Production of sweet gas in the East Panhandle was limited to 98,670,000 feet daily, 9,933,000 feet less than August.

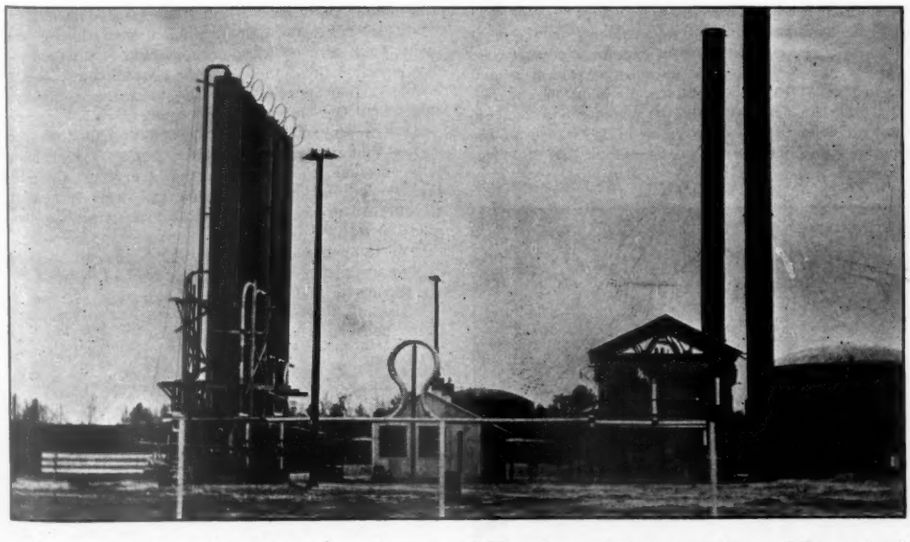
The sour gas area of the West Panhandle was given an allowable of 633,794,000 feet daily, 7,924,000 feet less than August.

Rodessa output was set at 51,999,000 feet daily, a reduction of 2,318,000 feet. The monthly take from the Dees-Young sand was placed at 737,940,000 feet, for the Gloyd sand at 524,880,000 feet and for the Hill sand 297,150,000 feet.

The Railroad Commission set September 19 for the October oil and gas proration hearing. Special consideration will be given to the method of ascertaining the demand for gas in the East Panhandle field and the sour gas area of the West Panhandle field.

Gas Exhibit at New York Fair

Officers and members of the boards of directors of the American Gas Association, Association of Gas Appliance and Equipment Manufacturers, and of Gas Exhibits, Inc., inspected the New York 1939 World's Fair September 8, following a luncheon that was given by Gas Exhibits, Inc., the cooperative organization conducting the gas industry's extensive participation in the exposition.



The new Premier Oil Refining Co. of Texas is operating this 3,000-bbl. refinery in the Cotton Valley field of Webster Parish, Louisiana. The plant charges the light lower Marine distillate production from the field, and manufactures specialty naphthas and solvents. Feature of the refinery is the combination of natural gasoline and refinery operations, and the fine fractionation obtained in making close-cut products.

INTERNATIONAL NEWS

Oil Production in Egypt Is Expected to Increase

Egyptian crude oil production dipped in May to 91,694 bbls., compared to 101,127 bbls. in the preceding month, according to reports from Cairo received by the U. S. Department of Commerce. The country produces about 1,500 bbls. of natural gasoline per month in addition to its crude oil output.

Production reports for June and remainder of 1938 are expected to show a substantial increase over output for the first five months due to discovery and commercial development of the new Ras Ghareb field on the most northern tip of the Red Sea, just south of the point at which the Suez Canal takes up to join the Mediterranean. Two producing wells have been completed in the Ras Ghareb field for output of about 1,000 bbls. per day initial.

Colombia and Peru Output Is Greater Than Previous Month

International Petroleum Co. Ltd. produced 2,918,189 bbls. of crude oil in Colombia and Peru during July, a gain of 26,283 bbls. over output for the preceding month, but 17,981 bbls. less than recovered for the same month in 1937.

Tropical Oil Co., a subsidiary of International, operating in Colombia produced 1,803,143 bbls. of crude in July compared to 1,810,049 bbls. in June. However, Tropical's production this year continues at a substantially higher rate than registered in 1937. During July last year Tropical produced 1,682,102 bbls. of crude or 121,041 bbls. less than reported last month. The gain over 1937 in Tropical's Colombian production has been well maintained over the past seven months during which production totaled 12,077,237 bbls. For the same period in 1937, Tropical's output totaled 11,653,481 bbls., leaving a favorable balance of 423,856 bbls. for 1938.

In Peru, International's production has followed an opposite trend to that of Colombia. During July this year, International produced 1,115,046 bbls., a drop of 139,022 bbls. below the recovery of 1,254,068 bbls. for the same month in 1937. For the first seven months of this year, Peru production totaling 7,772,179 bbls. has been reported by International compared to 8,620,874 bbls. for the same period in 1937, a loss of 848,695 bbls.

Oil Production in Iran Dropped Sharply in June

Crude oil production in Iran dropped sharply in June totaling 754,000 tons, or approximately 5,662,540 bbls. Not since February, 1937, has monthly production from Iran dipped below the figure reported for June. During the first six months of this year total production was reported at 5,267,000 tons, or 39,555,170 bbls., compared to 4,749,000 tons or 35,664,990 bbls. for the same period in 1937. In May this year, Anglo-Iranian Oil Co. reported production of 908,000 tons from Iran, or about 6,819,080 bbls.

American Equipment and Capital In Australian Shale Program

American suppliers are expected to furnish refinery equipment worth in the neighborhood of $1,000,000 and American capital is expected to finance a 140-mile pipe line the cost of which is estimated at $2,000,000 to $2,500,000, if present plans reach maturity in the New South Wales shale program.

Two companies local to Australia are directly interested in the oil from shale project. Standard Oil Co. of Australia, Ltd., which has no connection with any American firm, owning shale leases at Baerami and the Capertee Petroleum Proprietary, Ltd., owning leases in the Capertee-Newnes area, are the producing companies involved in the development.

It is estimated that the entire expenditure on the project would be in the neighborhood of $4,800,000 and that equipment from the United States to carry out the development would be admitted duty free into Australia. According to reports, provided the arrangements go through as planned, a refinery for treatment of oil delivered by the pipe line will be erected by the Capertee company on a site near Sydney now being surveyed, and the company will refine the oil and arrange for its distribution. The company has been registered in Sydney recently with a capital of $3,750,000 of which sufficient has been subscribed for its requirements. The company will have the right to purchase the pipe line after it has been constructed and operated for a period by the American interests represented.

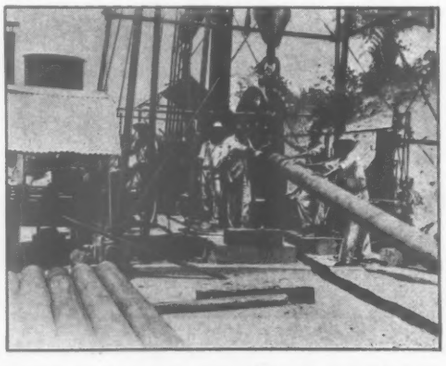
The Capertee company is contracting to purchase oil retorted on the Standard Oil Co. of Australia leases at Baerami, where that company owns and controls further areas of 13,500 acres which have been tested successfully. Under the negotiations now being completed, the Standard of Australia has undertaken to finance and arrange at an early date commencement of large-scale mining operations at Baerami and the construction there of a retorting plant involving an expenditure of about $1,500,000.

The Capertee company is also out to own and develop leases and erect retorts and to purchase oil retorted on leases owned by other interests, that will develop other parts of the state as a result of the construction of the pipe line. The Capertee company itself is taking leases in the Lithgow-Newnes area of about 50,000 acres and the pipe line route contemplated would run through this property.

About a year ago the Australian Government made an agreement to exempt from federal petrol excise production of shale oil from operations at Newnes in New South Wales and it is believed a similar exemption will be granted to the Capertee and Standard companies. About a year ago, S. F. Davis, an Australian industrialist, formed a company to exploit the Newnes shale deposits. The Davis company obtained substantial assistance from the federal government and the New South Wales government. In the first place 20 years' exemption from excise duty was promised for the shale gasoline up to a maximum annual production of 10,000,000 gallons. In addition, the federal and New South Wales governments agreed to take up debentures to the value of $2,500,000 in the new company, which was registered in July, 1937, as National Oil Proprietary, Ltd. The agreement with the governments also provided for customs concessions on imported machinery, preference in government contracts, remission of mining royalties on the crude shale, a 20 per cent rebate on the railways for the oil and gasoline produced and a title to 55,000 acres at Newnes, rent free.

Promoters of the New South Wales shale oil schemes claim that within five years the production of oil within the state will reach about 84,000,000 gallons annually, sufficient to supply about 25 per cent of Australia's present petroleum requirements.

In the 1936-37 financial year the government income from petroleum excise duties and other taxes produced revenue of £8,673,000, so that culmination of this scheme involving exemption of excise duties will mean a revenue loss of £2,159,250, if the rate of production reaches its projected level.



Cia. Petroleo Nacional drilling in Valley of Riacho Doce, Alagoas, Brazil

Hungarian-American Company May Build a Pipe Line

Hungarian-American Oil Industry, Ltd., a newly formed Hungarian company with a share capital of about $2,870,000, has been formed to consolidate interests of European Gas & Electric Co., Standard Oil Co. of New Jersey and the government of Hungary in the Szentadorjan-Lispe district in the southwestern part of the country which gives promise of developing into one of central Europe's important oil reserves. The field has four producing wells and two others are in process of drilling.

Looking toward full and complete development of the Szentadorjan-Lispe field the interests now represented in Hungarian-American Oil Industry, Ltd., have given consideration to building a pipe line to Budapest, the main refining and consuming center of the country. The line, if built, would cost in the neighborhood of 7,000,000 pengos, about $1,000,000 at the current rate of exchange.

The new Hungarian-American company has been granted a concession covering the productive and potentially productive portions of the new field for a period of 40 years with the government receiving 15 per cent of production as royalty. A government geologist has been elected to the Hungarian-American company board, indicating that relationship between the private interests and the government are satisfactory.

Current production from the Szentadorjan-Lispe field, together with a small amount from the government field near Bukksek, approaches 400 tons per day, nearly half of the country's requirements. In the event further development should increase production to fill the entire national requirements, Hungary will save approximately $1,600,000 annually in foreign exchange alone. It is evident that the government will continue to encourage the American interests backed with adequate financing and with competent technicians to secure the greatest practical development of its new found field.

The following classification of oil from the Szentadorjan Lispe field is given by the Bureau of Mines of the Royal Hungarian Ministry of Industry:

	Pct.
Light benzene	21.9
Heavy benzene	4.2
Petroleum	28.0
Gas oil	14.5
Heavy oils	29.9
Loss	.9

Colon Development Well Completed in Tarra Field

The Colon Development Co., Ltd., continues its development program in the Tarra field (Las Cruces) with new completions averaging about one each 30 days. The latest well completed is the company's No. T-87 which registered initial yield of 750 bbls. per day.

ENGINEERING and OPERATING

In This Issue

RAMSEY, OKLAHOMA, FIELD DEVELOPED IN SYSTEMATIC MANNER
By Harry Simons ..... *Page 40*

The Ramsey field, near Stillwater, Okla., was opened the first day of 1938. Since then the field has been developed until there are now 13 producing wells and no dry holes on the community block. Attempts off the community block have been completely unsuccessful. This article gives a record of the wells drilled, and the drilling and production procedure.

PROGRESS IN METALS—*By W. L. Nelson* ..... *Page 44*

DEHYDROGENATION OF PARAFFINS OVER ACTIVATED CATALYSTS
By J. Burgin, H. Groll, and R. M. Roberts ..... *Page 48*

Report of the investigations by the authors of the catalytic dehydrogenation of the lower paraffins for the production of synthetic gasoline and other chemical products. Results of experiments with activated alumina, alone and combined with chromium oxide, are shown.

SAFETY FEATURES ON DRILLING RIGS ..... *Page 53*

The location and position of the drilling crew are important from a safety angle. The photograph and article show the proper position for safe working while breaking out a joint on a rotary rig.

MANUFACTURE AND USE OF SUBSTITUTE MOTOR FUELS IN EUROPE
By Dr. Gustav Egloff ..... *Page 56*

The race toward self-sufficiency in the European countries includes the development of a satisfactory motor fuel for cars and buses as the supply of petroleum to these countries is limited. To replace petroleum gasoline a wide range of products are being made from coal, wood, alcohols, natural gas and oil shales for use in motor vehicles. About 25 per cent of the total requirements of Europe will be satisfied by these manufactured fuels in the next year. Dr. Egloff discusses the manufacturing methods and distribution of these gasoline substitutes.

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PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 69*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 70*

Systematic Development of and Production Methods at

BY HARRY SIMONS

The Ramsey field, Oklahoma's newest Class D pool, is completely standardized in production and drilling equipment and has a drilling plan which will develop the petroleum resources in a most systematic manner. It was opened January 1, when the Mid-Continent Petroleum Corp. drilled No. 1 Ramsey, SW SW NW Section 18-18n-2e, southwest of Stillwater in Payne County, into the Wilcox sand from 4,768 to 4,795 feet and after bailing down 600 feet brought in Oklahoma's first new pool for 1938. Production was first estimated to be in excess of 10,000 bbls. per day of 43.2-gravity oil and 10,000,000 feet of gas. A brisk trading spree ensued, but as the field developed it appeared that Mid-Continent and associates had the lion's share of the productive territory with their unitized block in the W half of Section 13-18n-1e and the E half of Section 18-18n-2e.

To date there are 13 producing wells in the field. All are owned by the Mid-Continent and associates. They are operated as a community block, all producing from the Wilcox sand, and all having close to the same amount of recoverable oil and gas pressure. Producing wells, location and total depth are as follows:

No. 1 Ramsey, SW SW NW Section 18-18n-2e, total depth 4,795 feet.

No. 1 Columbia, NW NW SW Section 18-18n-2e, total depth 4,812 feet.

No. 1 Brandon, SE SE NE Section 13-18n-1e, total depth 4,791 feet.

No. 1 Wetzel, NE NE SE Section 13-18n-1e, total depth 4,788 feet.

No. 2 Columbia, NE NW SW Section 18-18n-2e, total depth 4,780 feet.

No. 2 Ramsey, NW SW NW Section 18-18n-2e, total depth 4,800 feet.

No. 2 Brandon, NW SE NE Section 13-18n-1e, total depth 4,834 feet.

No. 3 Columbia, NW NE SW Section 18-18n-2e, total depth 4,731 feet.

No. 3 Ramsey, SE SW NW Section 18-18n-2e, total depth 4,791 feet.

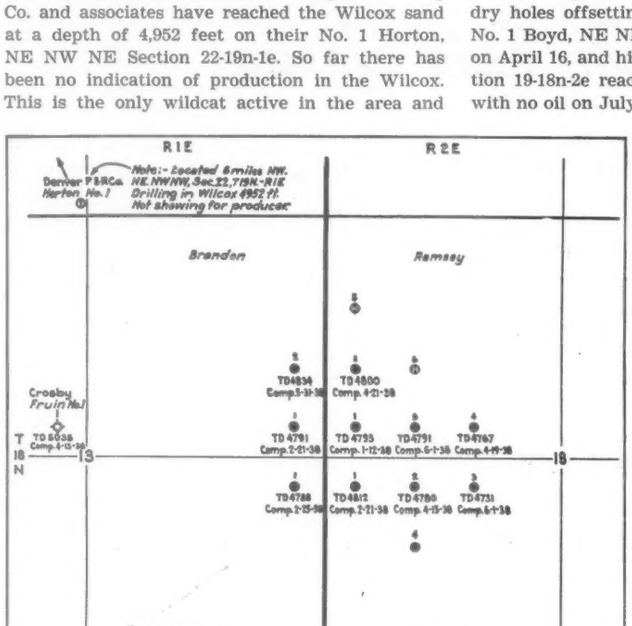
No. 4 Ramsey, SW SE NW Section 18-18n-2e, total depth 4,791 feet.

No. 4 Columbia, SW NW SW Section 18-18n-2e, total depth 4,785 feet. Completed Aug. 27.

No. 6 Ramsey, NW SW NW Section 18-18n-2e, total depth 4,763 feet, completed August 31.

No. 5 Ramsey, SW NW NW Section 18-18n-2e, total depth 4,789 feet, completed September 1.

Five miles to the north and three west of the Ramsey field, the Denver Producing & Refining Co. and associates have reached the Wilcox sand at a depth of 4,952 feet on their No. 1 Horton, NE NW NE Section 22-19n-1e. So far there has been no indication of production in the Wilcox. This is the only wildcat active in the area and operators were reporting about to abandon on September 2.


R1E
R2E
Note:- Located 6 miles NW. NE. NW NW, Sec. 22, T19N - R1E Drilling in Wilcox 4952 ft. Not showing for producer
Denver P & RCo. Horton No. 1
Brandon
Ramsey
Crosbie Fruin No. 1
TD 5038 Comp. 6-13-38
TD 4834 Comp. 5-31-38
TD 4800 Comp. 4-21-38
TD 4791 Comp. 2-21-38
TD 4795 Comp. 1-12-38
TD 4791 Comp. 6-1-38
TD 4767 Comp. 4-19-38
T 18 N
13
18
TD 4788 Comp. 2-25-38
TD 4812 Comp. 2-21-38
TD 4780 Comp. 4-15-38
TD 4731 Comp. 6-1-38
Wetzel
Columbia
Helmerich & Payne Ritchey No. 1
E. H. Moore Boyd No. 1
Note:- Located 3 miles SW. Con. NE NW Sec. 34, T18N-R1E.
TD 5353 Comp. 3-6-38
TD 5079 Comp. 4-6-38
E. H. Moore Means No. 1
TD 5090 Comp. 7-29-38
LEGEND
Oil well
Drilling well
Dry hole

Plat of Ramsey field showing wells producing and dry. (Drilling wells in community block completed for producers; wildcat is dry hole)

Four dry holes, three of them within a half mile of the discovery well have been drilled since the area became active. Helmerich & Payne got a duster, in the No. 1 Ritchey, C NE NW Section 34-18n-1e at a total depth of 5,353 on March 6. The No. 1 Fruin of J. E. Crosbie, Inc., in the SE SE NW Section 13-18n-1e showed dry on April 13, at a total depth of 5,035. E. H. Moore, Inc., had two dry holes offsetting the unitized block when his No. 1 Boyd, NE NE NE Section 24-18n-1e was dry on April 16, and his No. 1 Means, NW NE NW Section 19-18n-2e reached a total depth of 5,090 feet with no oil on July 20.

Before the Ramsey discovery there had been five dry holes drilled within a 5½-mile radius of the new field. Amerada Petroleum Corp. had a hole full of water at a total depth of 5,761 feet on their No. 1 Ingram in SE SE SE of Section 24-19n-1e in September, 1925. The No. 1 Geiber of the Twin State Oil Co. in the NE NW NE Section 23-18n-1e had dry sand at 5,020 feet in July, 1926. In 1930 the Gardner Petroleum Co. abandoned its No. 1 Montgomery at a depth of 4,818 feet and the Mid-Continent Petroleum Corp., in their first effort in this section of Payne County, got a hole full of water on their No. 1 M. T. G. Swank in the SE NE NE of Section 19-19n-2e at a total depth of 4,733 feet in February, 1934. The most recent test was that made by the Marathon Oil Co., the No. 1 R. C. Potts in SW SW SW of Section 27-19n-2e, which was dry and abandoned on February 6, 1935, at a total depth of 5,044 feet.

The field lies on a hog-back formation between Stillwater and Wild Horse creeks in Payne County and is roughly rolling country, cut by erosion and used mostly for grazing.

The structure is believed to be a truncated uplift with the Mississippian being eroded away in the productive area. The discovery well was started November 30, 1937, and attracted comparatively little attention.

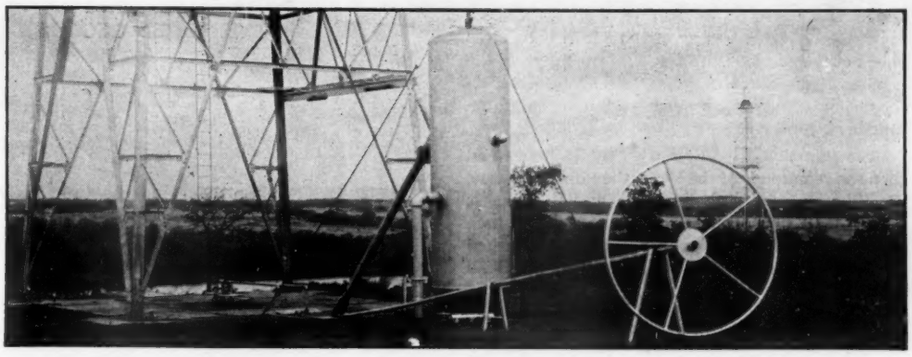
All of the production is under the mile square block lying in the W half of Section 18 and the

PRODUCTION TEST DATA

Choke opening—	Oil	Temp.	Gravity	Oil/gas ratio	Gas volume M. T.	Gas content (gal.)
1/2	55	..	...	954	1,260	.68
1/2	55	..	...	954	1,260	.68
2/2	70	46	41.6	831	1,400	.72
2/2	75	48	42.0	833	1,500	.76
3/2	87	48	42.5	750	1,575	.78
4/2	107	52	42.6	697	1,800	.84
4/2	110	40	41.2	608	1,800	.80
5	115	48	42.5	696	1,925	.88
6	123	50	42.7	654	1,950	.92
7	136	51	42.5	681	2,225	1.06
7/2	147	60	42.8	625	2,225	1.12
7/2	145	62	43.2	639	2,225	1.08
3/4	20	62	43.2	1,281	609	.72
5/8	19	61	43.1	1,366	609	.70

Suction rack made of junk drill pipe and heavy screen for keeping sticks out of pump. Unitized light plant in background. No. 4 Columbia in the Ramsey field

Drilling at Ramsey



Separator and hook-up on the No. 1 Ramsey, SW SW NW Section 18-18n-2e, Payne County. Floor and cellarways completely covered

E half of Section 13 owned by Mid-Continent and associates. This block was unitized before drilling of the wildcat started, Mid-Continent having three-fourths interest, Carter Oil Co. one-eighth, Sinclair Prairie and Transwestern a sixteenth each. Mid-Continent is operating the property. Immediately after completing the Ramsey No. 1, the Mid-Continent applied to the Oklahoma Corporation Commission for a ruling on the spacing in the area, casing program and field classification.

In a ruling handed down on March 14, the Oklahoma Corporation Commission granted the field Class D rating, ordered 10-acre spacing for the field proper and the 7,680 acres surrounding, and ruled that 900 feet of surface pipe should be set and cemented to the top with a pay string not to exceed 7-inch O.D. to be cemented not higher than the Viola lime.

As no forced offsets to the discovery well were possible, because of the unitization agreement, Mid-Continent started a systematic development of the field and offset the discovery well in three directions. Drilling was started on the No. 1 Columbia on January 23, on the No. 1 Brandon on January 24 and on the No. 1 Wetzel on January 26. After completing these three wells and proving all of the four leases in the block, the operators radiated out from the discovery well with the drilling of Nos. 2, 3, and 4 Ramsey, Nos. 2 and 3 Columbia, and No. 2 Brandon.

Drilling Equipment

Loffland Brothers and Kirk-Green-Way were given the drilling contracts, and it so happened that they both not only had the same type rig, but all three rigs had the same size convertible gas or butane motors, reversible clutch and pumps.

All of the derricks used are steel on steel substructures. They are built on concrete platforms with round concrete 18-foot cellars, allowing plenty of space for the blowout preventer above the gate valve and also for safety equipment while drilling in. As all the drilling rigs are the same, circulating and reserve mud pits are located in the same place on each location, the only variation being accommodation to the terrain.

Rigging up the drilling machinery requires from one to two days. The contractors purchased special substructures for the motors and reversible clutch to fit the substructure derricks. These are made of 10-inch I-beams and 6-inch drill pipe and are about 4 feet high, putting the motor and clutch level slightly below that of the floor.

The large internal combustion engines are LRO Waukeshas with an 8½-inch bore and an 8½-inch stroke capable of producing 300 hp. at 850 r.p.m. These motors are convertible to gas or butane and are cranked with small four-cylinder engines connected to the flywheel through a clutch. Under most drilling conditions they are run "compounded," that is with both motors hooked together on the pump and drawworks. While one motor is capable of pulling the pump, more satisfactory service is obtained by compounding as it utilizes the power from the drawworks that is in excess of that needed to drive the rotary table.

The pumps are Size C-250 with a 15-inch stroke, size 7¼-inch liner being used when drilling surface hole with 5- or 6⅝-inch pipe and size 6¾-inch liner when the 9-inch hole is being drilled with 4½-inch drill pipe. These pumps operate normally at 60 strokes per minute and develop a pressure of 850 pounds. The C-600 reversible Twin Disc clutch is built for a 600-hp. load. It is of the latest type, easy handling and has a positive neutral. While the drillers are not encouraged to leave their position while the clutch is in neutral for safety reasons, it is possible to do so. The main advantage is that the driller always knows when the clutch reaches the neutral position and there is no "feeling," guessing, or pulling into reverse.

The drawworks are all of the heavy unitized type, capable of hoisting much more drill pipe than is necessary in the drilling in this area. The rotary tables, crown and traveling blocks, swivels and hoses and mud lines are all of heavy, recent design. Drilling lines are an inch and one-eighth. All of the rigs have shale shakers for eliminating cuttings from the drilling fluid and the pits are also equipped with jets for removing shale and heavy mud. The reserve pit has an adjustable jet for returning the desired weight mud to the circulating pit. Pump suctions are equipped with screens to prevent chips, sticks and debris from entering the mud lines.

Fuel supply for the motors is obtained from the wells producing on the lease.

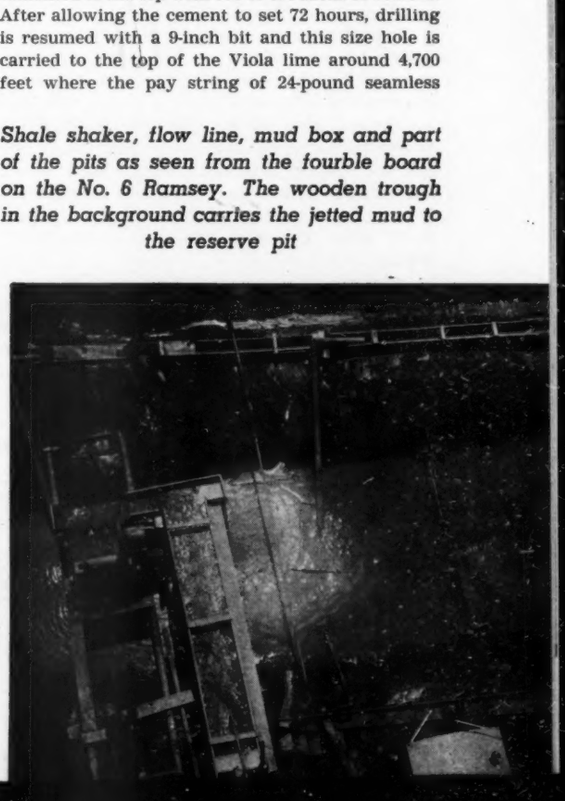
Formations

The top soil in the field is Permian to probably 700 to 750 feet. The upper Pennsylvanian formations are fairly soft to 2,600 feet and harden up for 400 feet. There is a medium soft break between 3,000 feet and 3,400 feet, after which the going gradually gets tougher to around 3,900 feet where a sharp decrease in drilling speed is noted. There is a softening of the formations just above the pay. Practice seems to be the use of a soft formation rock bit to about 2,600 feet and then to use a bit adaptable to the broken formations. The general geologic section and average drilling speed afford a comparison for bit selection.

To date there has been little trouble in keeping the holes straight. All of the rigs are equipped with long heavy drill collars and recent model weight-indicators and it is thus possible to know and control the weight on the bit. From 6 to 8 points is the maximum carried, with the rotary being turned from 125 to 150 r.p.m., generally the latter figure being used. The formations produce the mud needed to drill the wells, very little artificial material being required. Viscosity is kept down to prevent gas cutting, but the weight is built up to around 10.2 pounds per gallon just before reaching the casing point. There is also a sticky spot around 4,200 feet and a danger of losing circulation at 3,900 feet (Cleveland) and at 4,500 feet (Mississippi lime) for which the mud is built up to avoid trouble.

With the exception of the discovery well all of the producers have followed the practice of drilling about 900 to 950 feet of 12¼-inch hole and then reaming to 17¾ inches to a hard shell just above the 900-foot level. Either 45-pound lap-weld or 50-pound seamless 13-inch casing is run and cemented to the top with 500 to 600 sacks of cement. After allowing the cement to set 72 hours, drilling is resumed with a 9-inch bit and this size hole is carried to the top of the Viola lime around 4,700 feet where the pay string of 24-pound seamless

Shale shaker, flow line, mud box and part of the pits as seen from the fourble board on the No. 6 Ramsey. The wooden trough in the background carries the jetted mud to the reserve pit



ESTIMATED POTENTIALS FOR RAMSEY, OKLAHOMA, FIELD

Well—	T.D.	Drilling—Started	Drilling—Completed	Flow	24-hour flow (calculated)
No. 1 Ramsey	4,795	11-30-37	1-12-38	13,334/24 hrs.	13,344
No. 1 Columbia	4,812	1-23-38	2-21-38	1,872/4 hrs.	11,232
No. 1 Brandon	4,791	1-24-38	2-21-38	1,880/4 hrs.	11,280
No. 1 Wetzel	4,788	1-26-38	2-25-38	1,764/4 hrs.	10,584
No. 2 Ramsey	4,800	3-16-38	4-21-38	1,270/2 hrs.	15,240
No. 2 Columbia	4,780	3-16-38	4-14-38	1,645/3 hrs.	13,160
No. 2 Brandon	4,834	5- 1-38	5-31-38	824/2 hrs.	9,888
No. 3 Columbia	4,731	5- 1-38	6- 1-38	641/2 hrs.	7,692
No. 3 Ramsey	4,791	5- 2-38	6- 1-38	943/2 hrs.	11,316
No. 4 Ramsey	4,767	6-18-38	7-19-38	1,771/5 hrs.	8,400
No. 4 Columbia	4,785	7-31-38	8-28-38	2,237/4 hrs.	13,422
No. 6 Ramsey	4,763	8- 1-38	8-31-38	1,261/2 hrs.	14,892
No. 5 Ramsey	4,789	8- 2-38	9- 1-38	679/2 hrs.	8,148

7-inch O.D. pipe is set and cemented with 800 sacks. During the drilling of the 9-inch hole, close check of the samples and frequent coring gives the geological department the necessary information for not only correlative purposes but for potential plug-back depths.

The pay string is allowed to set 72 hours and then the remainder of the Viola, the Simpson dense, the lime and dolomite is drilled and the Wilcox cored. Drill pipe is then laid down and 2½-inch Grade C upset tubing is run and the well washed with water to remove the mud and then washed with oil to start production.

Production Equipment

All of the wells are equipped with 24-pound seamless 7-inch O.D. casing except the Ramsey No. 1, which has 26-pound pipe. All have 2½-inch upset, Grade C seamless tubing swung off bottom.

Two wing gates are placed on the casing to allow the well to clean itself when bringing in, to get open-flow potentials, and to provide a means of bringing the well under control in case of a blow-out. Separators are connected with a 7-inch flow line from the casing, and the tubing is connected into the flow line.

Bottom-hole tests show a rock pressure averaging 2,000 pounds, casing pressure on the wells ranges from 450 to 500, tubing pressure from 600 to 650 and when flowing tubing shows around 550 pounds. A back pressure of 40 pounds is kept on the separator to provide fuel for the drilling operations and move oil to storage.

While these wells are on a flat allowable and there are no rules governing the production from them, the operators are making a complete study of the production data gathered to determine the most economical rate of the producing the oil, the best methods of conserving the reservoir pressure atnd the procedure necessary to assure maximum ultimate recovery.

This is rather difficult as the low allowable does not permit many tests to be made as overproduction soon results because of the large output of the wells. Results of one such test are given in the accompanying table.

The only well given an open-flow test to date was the discovery well which flowed 13,344 bbls. in 24 hours. The other wells were only tested for two- to four-hour periods, showing similar capacities. History of production in the field is given in the accompanying table.

In addition to the limitation placed on the Ramsey field because of its Class D rating, the pipe line from the field takes oil only in amounts to meet its requirements. This has at times reduced the runs for the field considerably under the allowable. Up to and including the last day of July, 1938, there had been 182,668 bbls. run from the pool. This is substantially under the production allowed. Following are the runs for the various leases: Ramsey, 85,877 bbls.; Columbia, 34,319; Brandon, 37,701; Wetzel, 24,771.

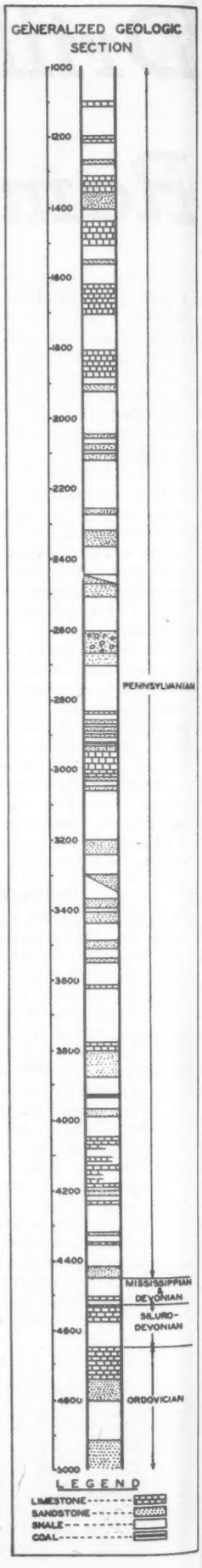
As the sand is loose and porous with ample gas pressure and the field is being operated in the manner to conserve it, it will probably be some time before any secondary production equipment will be needed. After the Wilcox zone is emptied, there will probably be some plug-back work.

AVERAGE DRILLING SPEED IN FEET PER HOUR FOR BITS IN RAMSEY FIELD, OKLAHOMA

Depth From (ft.)	Depth To (ft.)	Feet per hr.	Depth From (ft.)	Depth To (ft.)	Feet per hr.
950	1,300	26.7	3,600	3,700	12.2
1,300	1,650	24.4	3,700	3,800	12.0
1,650	2,050	18.9	3,800	3,900	11.1
2,050	2,325	17.0	3,900	4,000	7.1
2,325	2,550	17.4	4,000	4,100	8.2
2,550	2,675	13.5	4,100	4,200	9.9
2,675	2,900	10.7	4,200	4,300	7.8
2,900	3,000	10.1	4,300	4,400	6.5
3,000	3,300	14.9	4,400	4,500	6.2
3,300	3,400	14.1	4,500	4,600	6.3
3,400	3,500	12.8	4,600	4,700	9.3
3,500	3,600	12.8			

GENERALIZED GEOLOGIC SECTION

Depth (feet)	Formation	Nature of formation
0-950	Shale, sand, lime	
950-1,100	Shale, sand, lime	
1,100-1,115	Neva lime	Gray, finely crystalline, fossiliferous
	Shale	
1,205-1,215	Foraker lime	Soft, finely crystalline, white
	Shale	
1,275-1,285	Sand (unnamed)	
	Shale	
1,310-1,700	Pawhuska	Upper: Lime, sand, shale; mostly lime with some lignite; some calcareous sand Middle: Finely crystalline, white
	Shale	
1,800-1,880	Lower Pawhuska Deer Creek	Lime
	Shale	
1,900-1,925	Upper Hoover	Medium grain, porous, white sand (5 ft. to 25 ft.)
	Shale	
2,050-2,125	Middle Hoover	Layers of sand and shale (20 ft. to 75 ft.)
	Shale	
2,250-2,700	Tonkawa series	Sand and shale with weathered conglomerate (always present)
	Shale	
2,830-2,835	Avant dolomite	Coarsely crystalline dolomite
2,835-2,955	Shale and sand streaks	
	Shale	
2,980-3,015	Dewey lime	Buff to gray, finely crystalline (10 ft. to 25 ft.)
3,015-3,065	Dewey sand and shale	Sand and shale streaks
3,065-3,200	Dewey shale	
3,200-3,550	Layton series	Alternating shales and sands
3,550-3,620	Shale	
3,620-3,625	Hogshooter	Finely crystalline, brown, fossiliferous lime (0 ft. to 25 ft.)
3,625-3,780	Shale	
3,780-3,800	Checkerboard	Finely crystalline, white to darwn brown lime (5 ft. to 20 ft.)
	Shale	
3,820-3,870	Upper Cleveland	Silty, micaceous, shale sand (10 ft. to 50 ft.)
	Shale	
3,930-3,935	Coal	1 ft. to 5 ft.
	Shale	
3,970-3,990	Lower Cleveland	Fine-grained, porous sand (5 ft. to 20 ft.)
	Shale	
4,050-4,200	Oswego	Broken limestone and shale with large chunks lime; gray to brown, fine medium crystalline hard lime (rough drilling)
	Shale	
4,200-4,210	Prue	Micaceous silt to fine grain sand (2 ft. to 10 ft.)
	Shale	
4,220-4,225	Verdigris lime	Gray to dark brown, medium crystalline, fossiliferous lime (2 ft. to 5 ft.)
	Shale	
4,320-4,325	Skinner sand	Fine-grained sand with show of oil or gas (1 ft. to 5 ft.)
4,350-4,358	Inola lime	Fine to medium crystalline, buff color (2 ft. to 8 ft.)
	Shale	
4,420-4,450	Bartlesville	Shale and sand (15 ft. to 30 ft.)
	Shale	
4,500-4,510	Mississippi lime	Brown, argillaceous, granular limestone; very hard; cavernous (can lose circulation); probably under 10 ft. but can be 125 ft.
4,510-4,520	Chattanooga shale	Sometimes 30 ft. to 45 ft.
4,520-4,524	Misener	Hard, medium-grained sand with show oil or gas (0 ft. to 4 ft.)
4,530-4,580	Hunton	Porous, coarsely crystalline to finely crystalline brown lime; top may have 15-ft. to 25-ft. saturation with bottom dry (40 ft. to 60 ft.)
4,580-4,660	Sylvan	Green shale
4,660-4,700	Viola	Coarsely crystalline, white limestone (30 ft. to 40 ft.)
4,700-4,710	Simpson dense	5 ft. to 10 ft.
4,710-4,740	Limes and dolomites	Brown dolomite and lime
4,740-4,800	Wilcox (first)	Upper 5 ft. to 10 ft. sand, dolomite and green shale (dry), followed by coarsely crystalline round sand containing oil; 30 ft. in, formation gets shaly and saturation ends; off structure it is 60 ft. from base of first Wilcox to top of second



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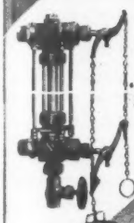
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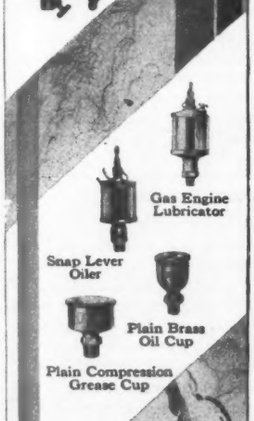

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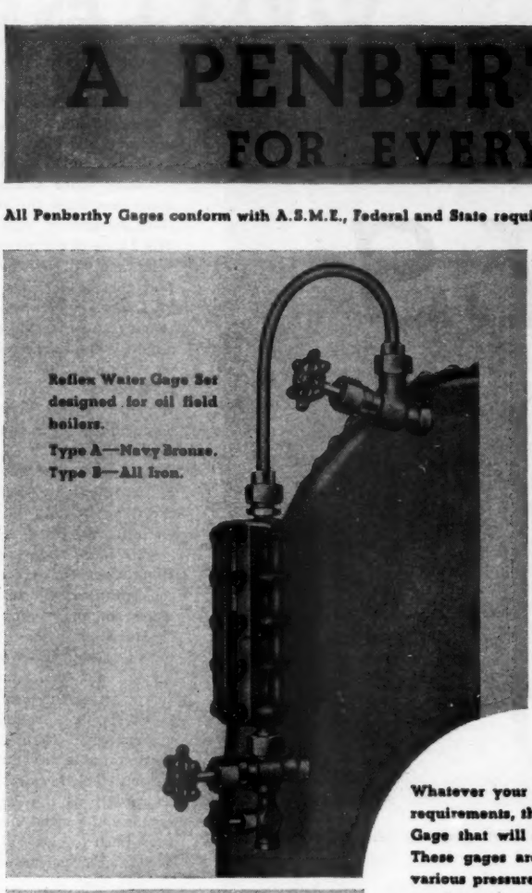
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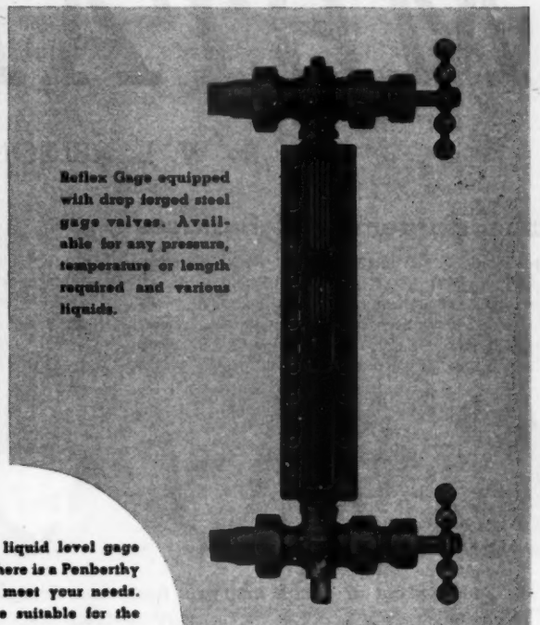
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Progress in METALS

By W. L. NELSON

Flame Hardening of Surfaces

This relatively new method[2] of hardening the surface of steel gives promise of being an outstanding contribution to the art of heat treating. Although its possibilities have not yet been completely explored, in some instances it has been put on a mass production basis. The importance of surface hardening has increased year by year with the more exacting requirements for machine parts and it will probably continue to gain in importance because the properties that are desirable on the surface of a material are not at all suitable for the main body of the material. In other words, a hard, wear-resistant steel that is desirable for the surface or case would be too brittle for the main bulk of the part. Thus, two opposing types of properties are desirable—a hard, wear-resistant surface whose inherent brittleness is ameliorated by using only a thin surface, and a tough shock-resistant core for reinforcing the thin brittle case.

Steels may be hardened by heating them to a high temperature, quenching, and reheating to a lower temperature for tempering or modifying the extreme hardness that may be produced in the quenching operation. The carbon dissolves in the steel during the first or heating operation. During quenching the alloy is cooled so quickly that the carbon does not have time to separate in the normal manner, with the result that the alloy is far harder. Unless the quenching operation is controlled minutely, which is usually expensive, the steel will be too hard and brittle, and hence the hardness of the quenched stock is modified by a tempering operation which permits a partial separation of the carbon.

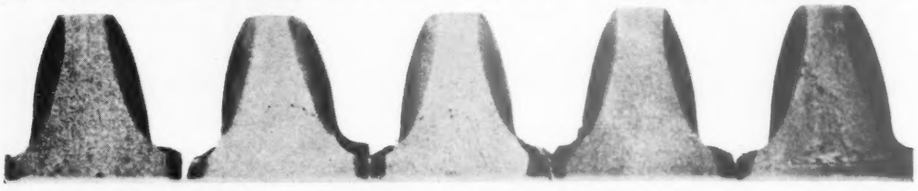


Fig. 1—Sections cut at 1-inch intervals from flame hardened gear to show case uniformity of teeth

The hardening of steel as outlined above has been practiced for hundreds of years and hence the fundamentals of flame hardening have long been known. Flame hardening differs from the regular hardening operation only because it involves a selective and more careful control of the original heating operation. Normally the entire piece is heated to a uniform temperature and then quenched, whereas in flame hardening the heating is conducted so rapidly (up to 40° F. per second) that only the surface of the piece is heated and the core undergoes no hardening whatever. Obviously, the process is vitally dependent on the rate of heating, and if this one problem is successfully managed, the process holds consistent advantages over the current methods of surface hardening. The stress, distortion, and scaling that are usually associated with regular quenching operations are avoided to a large extent by flame hardening because the time of heating is extremely short and the core of the piece is not quenched at all. Stresses that develop in the case due to unequal heating or the rapid quench are relieved to a considerable extent by a final tempering or drawing to a temperature of 300°-400° F. with little effect on the hardness of the surface. One of the main applications of flame hardening is the hardening of gear teeth. In Figure 1 are shown several sections of a gear tooth. The sections were cut at 1-inch intervals across the tooth. The uniformity of case across the entire tooth indicates a uniform hardness and an excellent job of controlling the heating operation.

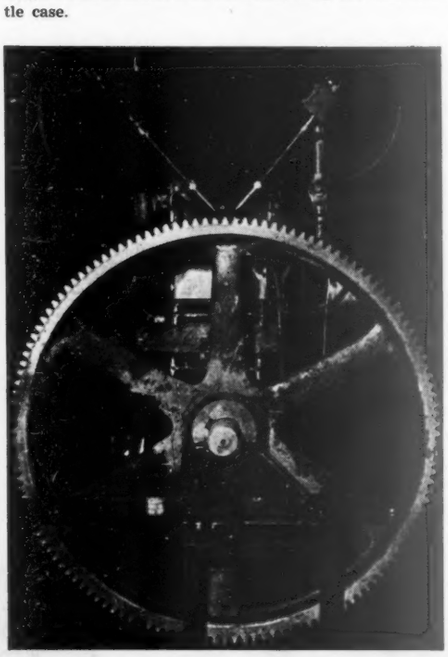


Fig. 2—Spur-gear being flame hardened at rate of one tooth a minute

One means of conducting flame hardening is indicated in Figure 2. Each tooth of the gear it heated separately by means of the automatic acetylene torch equipment indicated at the top of the picture. The mechanism moves the torches, followed by a water spray for quenching, along the tooth of the gear and then automatically moves to the next tooth. About one minute is consumed in hardening each tooth.

Many other similar methods are available and in many instances the torch can be mounted on regular shop equipment, such as lathes or cutting machines. The Linde Air Products Co. has been active in the development[1] of the method, and they have designated four general methods of conducting flame hardening.

1. *Stationary or spot method.*—The part is held stationary and a single spot or area is hardened. An example is the hardening of automotive valve stems.

2. *Progressive method.*—The torch or the work move with respect to each other in a progressive manner until the entire surface has been covered. The gear-hardening operation illustrated in Figure 2 is an example of this method.

3. *Spinning method.*—In this method a circular part is turned rapidly, being heated with a flame, and then the flame is removed and the quench spray is applied while the work still spins.

4. *Combination method.*—This method is similar to spinning except that the torch moves progressively along the spinning article followed by the quench spray. Axles and shafts may be handled in this manner.

Hardening may also be accomplished by use of a hard torch but exact control of the heating time is necessary, a nice coordination of all operations, and wise judgment on the part of the operator.

Steels that are most suitable for flame hardening are shown in Table 1. The low-alloy steels are usually more suitable for quenching operations than the plain carbon steels because they do not need to be quenched as rapidly as the carbon steels. The higher the percentage of special element the slower the rate of cooling—until for a nickel steel containing 0.5 per cent of carbon and over 10 per cent of nickel, the piece can be cooled in air and still be hardened. Thus, the severe stresses of quenching which result in cracking and checking can be avoided to a large extent by using low-alloy steels. In spite of this advantage, it is usually advisable to follow the heating and quenching operations by a tempering to 300°-400° F. in a furnace or bath to relieve thermal stresses.

TABLE 1—STEELS FOR FLAME HARDENING

Flame-hardening steels—	Type analysis	Case hardness* Scleroscope	Case hardness* Brinell
S.A.E. 1035-1070	C .30-.80, Mn .70 max.	50-90	350-700
S.A.E. T1335-T1345	C .30-.50, Mn 1.60-1.90	75-90	550-700
S.A.E. 2340-2350	C .35-.55, Ni 3.25-3.75	70-80	500-600
S.A.E. 4140-4150	C .35-.55, Cr .80-1.10, Mo .15-.25	70-85	500-650
S.A.E. 4640	C .35-.45, Ni 1.65-2.00, Mo .20-.30	70-80	500-600
S.A.E. 5140-5150	C .35-.55, Cr .80-1.10	70-85	500-650
S.A.E. 6135-6150	C .30-.55, Cr .80-1.10, V .15-.20	75-85	550-650
Carbon-Vanadium	C .45-.65, V .15 min.	70-90	500-700
Cromansil	C .30-.45, Cr .40-.60, Mn 1.00-1.30, Si .70-.90	75-85	550-650
Manganese-molybdenum	S.A.E. T1335 or T1340 plus Mo .15-.25	75-85	550-650

*Hardness determinations on flame-hardened parts should preferably be made with the scleroscope. The Brinell numbers shown here have been converted. Hardness figures are for water-quenched materials.

Applications

Most of the regular applications that are now handled by the customary hardening methods of case-carburizing and nitriding can also be handled by flame hardening—although, as yet, all of these applications have not been investigated. Early developments were conducted on crankshafts[2] and gears, but such parts as circular machine tools, cams and camshafts, automotive valve pins, pins, pump plungers, oil-tool joints and many others have been handled recently. The steel[3] used for tool joints was a manganese molybednum steel of the following composition:

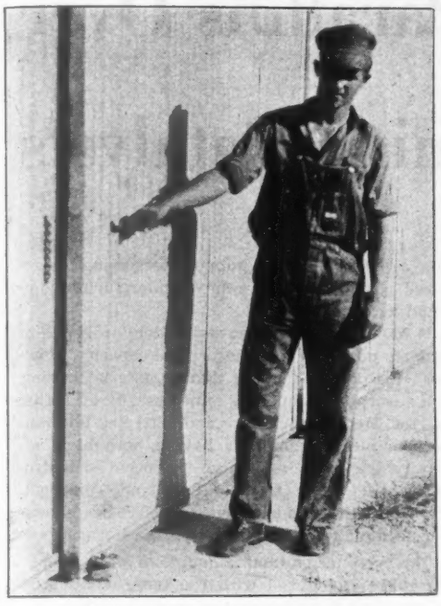
	Per cent
Carbon	0.4-0.45
Manganese	1.0-1.2
Molybdenum	0.2-0.3
Iron and others	Rest

Such tool joints have been hardened on a mass production scale. The surface was hardened to 500-600 Brinell hardness number.

References

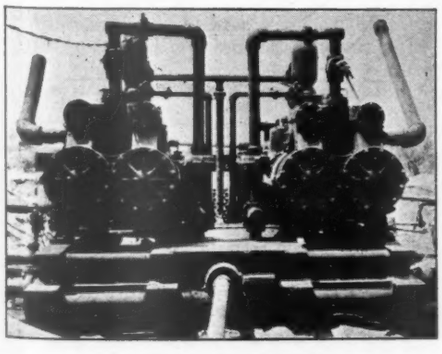
1. Anon.—Flame Hardening, Bulletin of the Linde Air Products Co.
2. Voss, H.—Ortliche, Oberflachenhartnung von Kurbelwellen. Z.V.D.I., June 15, 1935.
3. Anon.—Flame Hardening and Molybdenum Steels, the Moly Matrix, Vol. 5, No. 5, April, 1938, of the Climax Molybdenum Co.

OPERATING IDEAS



Unique Garage Door Handle

The machinist at a compressor station of a gas pipe line hit upon a simple solution of an aggravting problem. Conventional handles, on garage doors made of corrugated iron, had given trouble because they would pull off as the doors slid back. By bolting a short piece of chain on the door in one of the valleys of the corrugation, it was possible to provide a good handle. When the handle is not in use, it lies flat between two corrugations.

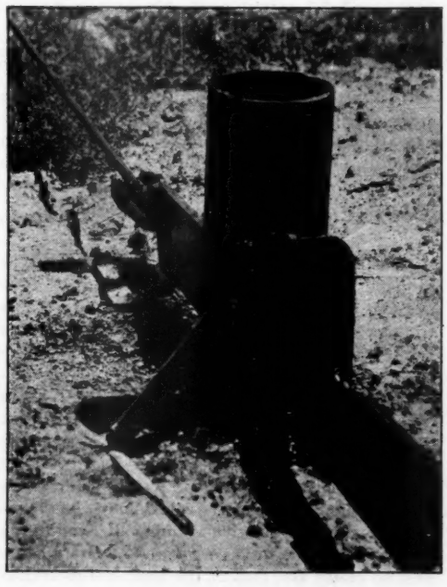


Portable Slush Pump Mounting

A drilling contractor in West Texas mounted two slush pumps parallel to each other on skids in order to make them readily portable. By the hook-up which he used, a single steam line serves the two pumps; therefore, it is necessary to make a connection at only one coupling when the unit is moved to a new location.

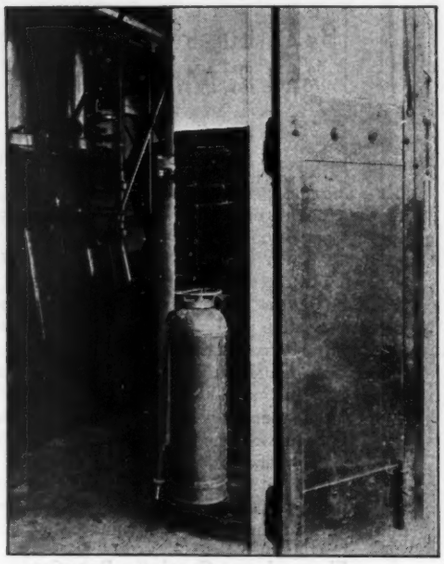
Christmas Tree for Tools

A christmas tree for electric tools provides a handy way to keep these so that they may be easily hung up and readily accessible. This rack has been fabricated by the welder at a trunk line pipe line station. The base is light and substantial in order that it may be suitable for moving within the plant.



Rod Line Knock-Off

A very simple rod line knock-off has been designed by a company operating in St. Louis area of Oklahoma. A piece of 10-inch pipe set in concrete and slotted so that the knock-off bar works freely. Welded to the pipe is a plate of steel about 12 by 14 inches in size. A steel lever is bolted to this plate. By raising this lever, the plate drops into a slot on the guide bar and throws slack into the pull rod so that the operator may disconnect the rod line.

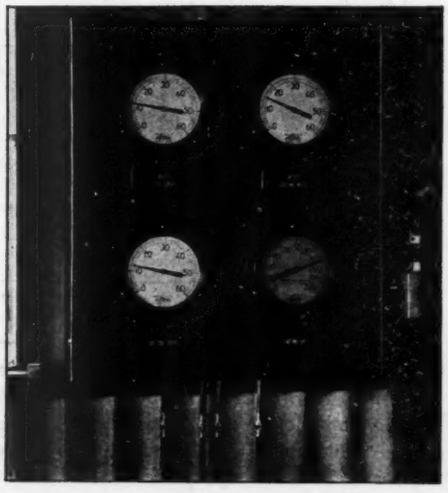


Fire Extinguisher Near Door

A major pipe line makes a point of having fire extinguishers near doors. This applies to both the extinguishers which hang on the wall and those which are mounted on wheels. In case of fire a man coming in the door finds the extinguisher where he can readily get it.

Compressor Station Gauges

At a compressor station on a Texas gas line a compact and convenient instrument board has been placed at a central point in the plant so that the engineers may readily watch the temperatures of the water coil spray, gas coil spray, and jacket cooling water, as well as the pressure of the starting air. The cooling tower at the plant is an enclosed, forced draft type.



Dehydrogenation of the Lower Paraffins Over Activated Alumina Catalysts

By J. Burgin, H. Groll and R. M. Roberts
Shell Development Co.

Increasing demands for the lower olefins as base materials for synthetic gasoline and chemical products have led to the investigation of catalytic dehydrogenation processes for their production from the lower paraffins. This paper gives results of experiments with activated alumina, alone and combined with chromium oxide, which has proved to be a selective catalyst for dehydrogenation. This type of catalyst is stable at temperatures favorable to the dehydrogenation from the standpoint of equilibrium. Although its catalytic activity decreases with time, it can be repeatedly regenerated.

The lower molecular weight paraffins and olefins that form in large quantity during the cracking operation were at first considered by the petroleum industry as undesirable by-products, which could be used at best as fuel. However, with the increasing development of processes for the manufacture of synthetic chemical and gasoline products from the lower olefins, the situation has gradually changed so that the time is not far distant when a shortage of certain of these olefins may be expected.

In anticipation of such a shortage, extensive work has been conducted in these laboratories over a number of years on processes for increasing the supply of olefins. The present paper deals with one of these processes, the catalytic dehydrogenation of propane, normal butane, and isobutane.

Thermal vs. Catalytic Reaction

In the pyrolysis of hydrocarbons the splitting of the carbon to carbon bond predominates and little control is obtained of the final reaction product. Thus when propane, normal butane or isobutane is subjected to pyrolysis, considerable quantities of lower paraffins and olefins, as well as carbon and hydrogen, are produced, and dehydrogenation to an olefin of the same number of carbon atoms takes place to an unsatisfactory degree.

Equilibrium data show that olefin formation by dehydrogenation should be extensive at temperatures where breaking of carbon to carbon bonds occurs only to a small degree; theoretical conversions calculated from previously determined[4,9] equilibrium values are shown graphically in Figure 1. Thus with a suitable catalyst it would be possible to selectively accelerate the dehydrogenation reaction at the expense of the other pyrolytic reactions.

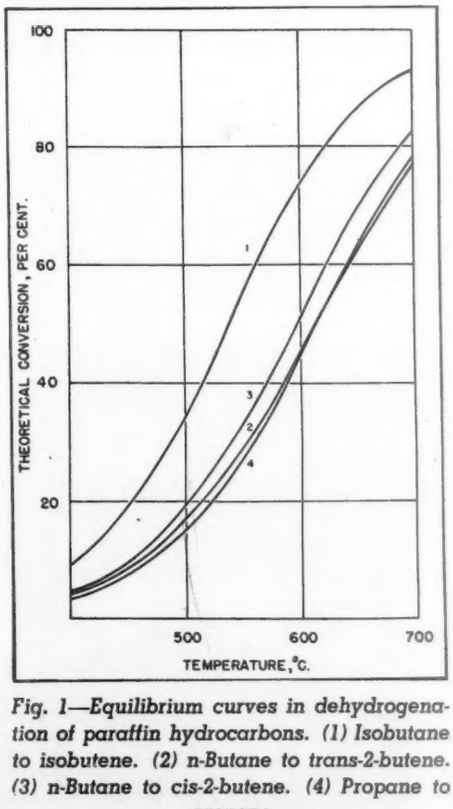


Fig. 1—Equilibrium curves in dehydrogenation of paraffin hydrocarbons. (1) Isobutane to isobutene. (2) n-Butane to trans-2-butene. (3) n-Butane to cis-2-butene. (4) Propane to propene

In selecting a catalyst, cognizance must be taken of the thermal stability of the hydrocarbon, for this will affect the allowable temperature of operation. Of the three hydrocarbons studied, propane is the most stable, followed by isobutane and normal butane.[3]

Experimental Procedure

The experimental work was carried out with propane, normal butane, and isobutane of 95 to 98 per cent purity, prepared by fractionation from petroleum gases. These hydrocarbons were passed through a drying tube containing calcium chloride and then through a quartz reaction tube containing the catalyst under examination; the reaction tube was heated in either a gas or an electric furnace. The gas flow and temperature were measured by standard methods. The gases were analyzed by acid absorption or by Podbielniak distillation. Conversions were calculated from the gas analyses and the relative volumes of feed and effluent gases. The ratio between the amount of the desired olefin and that of the total olefins formed presents a ready means of following the efficiency of the dehydrogenation reaction, provided cracking to carbon is not extensive.

Characteristics of Dehydrogenation Catalysts

The activity of a dehydrogenation catalyst depends not only on its chemical composition but also on its physical structure. A compound can be quite inactive in one form or very active in another; the method of preparation is therefore of importance. It is often difficult to obtain a structure which is capable of catalyzing dehydrogenation; a carrier or active support possessing the required physical structure may render such a compound active.

It has been found that active dehydrogenation catalysts possess a high adsorptive capacity. However, this does not imply that a material having high adsorptive properties is necessarily an active catalyst. Activated carbon[5] and activated alumina are examples of materials having both high adsorptive capacity and high selective dehydrogenation activity. On the other hand, silica gel, which has a high adsorptive capacity, has shown very little activity as a dehydrogenation catalyst.

The presence of small amounts of water vapor, preferably introduced with the feed, is essential for practical dehydrogenation activity. Many experimental results show that a dehydrogenation catalyst is active only when covered by a monomolecular layer of water.[2] The water may be substituted by hydrogen sulfide or a combination of the two gases.[8]

The active period of a catalyst is limited by many factors, such as clogging of the pores (for example, by carbon and tar), disruption of the physical structure (by extensive temperatures), and poisoning by foreign chemical compounds. A cat-

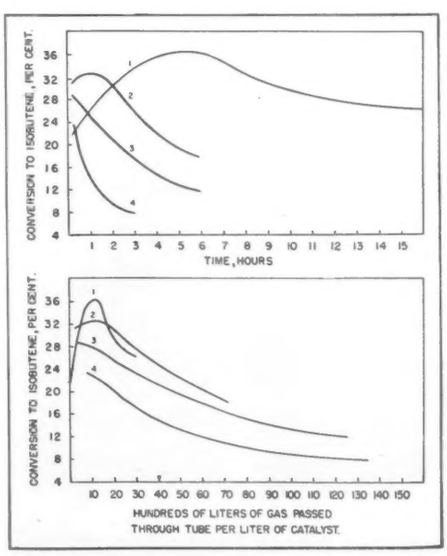


Fig. 2—Dehydrogenation of isobutane over activated alumina catalyst

Curve	Temp. °C.	Space velocity per min.	Ratio*	Duration of run	Per cent average conversion to isobutene	Production†
1	600	3.3	.80	16 hrs.	29.8	944
2	650	20	.74	6 hrs.	25.0	1,800
3	650	35	.71	6 hrs.	17.6	2,218
4	650	76	.71	3 hrs.	12.0	1,642

*Isobutene to total olefines. †Liters of isobutene gas per liter of catalyst.

alyst can generally be regenerated if its physical structure has not been destroyed.

Activated Alumina as Dehydrogenation Catalyst

The particular form of activated alumina which has been found satisfactory as a catalyst for dehydrogenation is a commercial product of very porous structure, sold as a drying agent. This alumina is made by calcining a specially crystallized alumina trihydrate. In the laboratory an activated alumina which compares well with the commercial product

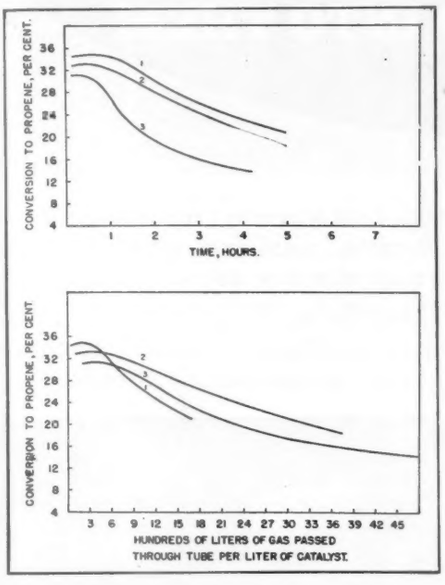

CONVERSION TO PROPENE, PER CENT.
TIME, HOURS.
CONVERSION TO PROPENE, PER CENT
HUNDREDS OF LITERS OF GAS PASSED
THROUGH TUBE PER LITER OF CATALYST.

Fig. 3—Dehydrogenation of propane over activated alumina catalyst

Curve	Temp. °C.	Space velocity per min.	Ratio*	Duration of run, hours	Average conversion to propene, per cent	Production†
1	650	5.7	.84	5	28.1	480
2	650	12.5	.86	5	25.8	968
3	650	20.0	.87	4	20.9	1,002

*Propene to total olefines. †Liters of propene gas per liter of catalyst.

was prepared by dissolving aluminum in sodium hydroxide and precipitating aluminum hydroxide from the solution by means of carbon dioxide gas; the resulting precipitate was carefully washed and dried at 600° C.[6]

For the dehydrogenation of isobutane over this activated alumina the optimum temperature range is 585° to 650° C. for space velocities ranging from 2 to 75 per minute; for propane the optimum temperature range is 625° to 650° C. for space velocities between 5 and 20 per minute. At lower temperatures the rates of reaction decrease rapidly; at 550° C. very little reaction takes place. As the temperature is increased, reactions leading to lower olefins, carbon, and hydrogen increase. Yields of all products from two representative experiments with isobutane are listed in Table 1.

TABLE 1—DEHYDROGENATION OF ISOBUTANE OVER ACTIVATED ALUMINA

(6-hour composite samples)

Temperature, °C.	600	650
Space velocity, per min.	3.3	35
Isobutane reacted, per cent by weight	44.1	35.5
Conversion to isobutene, per cent	31.6	17.5
Yield, per cent by weight:		
Hydrogen	4.2	2.4
Methane	6.6	5.2
Ethylene	0.6	0.8
Ethane	0.0	2.0
Propene	5.6	10.9
Propane	1.3	6.1
Isobutene	71.9	57.2
Carbon	9.8	15.4

The course of the dehydrogenation is illustrated for isobutane in Figure 2 and for propane in Figure 3. In the upper curves of these figures the conversion is shown as a function of time; and in the lower, as a function of the total amount of hydrocarbon which has passed through the reaction tube. From Figure 2 it will be seen that (after an induction period) the highest conversion to isobutene is obtained at the lowest space velocity (and temperature) and that the activity of the catalyst at this low flow decreases only slowly; experiments have shown that the conversion to isobutene does not fall below 20 per cent over periods of 60 to 100 hours. There is, however, a much greater production of isobutene per unit period of time per unit volume of catalyst when high space velocities are employed, but in this case the activity of the catalyst decreases more rapidly, necessitating more frequent regeneration. The choice of space velocity thus depends upon the relative importance of these factors in the given application. Propane, as may be seen from Figure 3, behaves somewhat similarly, but the effect of space velocity on percentage conversion and decline of catalyst activity is much less pronounced; hence in this case high space velocities have a very definite advantage.

As mentioned above, the presence of a small but finite amount of water vapor in the hydrocarbon feed is of the utmost importance for successful catalytic dehydrogenation. In the case of activated alumina catalyst, the optimum water content of the feed is if the order of 0.1 mol per cent; and this value is approximated by passing the moist feed over calcium chloride. When a feed is dried more thoroughly (for example, by means of phosphorus pentoxide) there is a definite decrease in the activity of the catalyst; and intensive drying (by means of triphenyl methyl sodium) results in complete loss of activity.[2] Moisture content higher than the optimum also leads to a rapid decline in catalyst efficiency. These facts are illustrated in Figure 4, where the maximum conversion, which may be taken as a measure of the activity of the catalyst is plotted against the molal concentration of water in the feed. The close regulation of water content is probably necessary not only to enable formation of a layer of water molecules on the surface of the catalyst, but also to maintain the alumina in the proper state of hydration. A similarly close relation has been found[1] between the water content of activated alumina and its adsorptive capacity toward hydrogen sulfide; this is of interest in view of our observations (discussed below) regarding the close parallelism between the adsorptive capacity of activated alumina

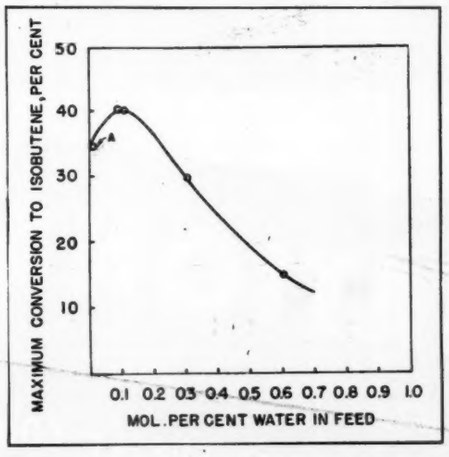


Fig. 4—Influence of water vapor on the dehydrogenation of isobutane over activated alumina

Space velocity, 3.3 per minute
Temperature, 600° C.
Point A represents feed dried over P_2O_5

for hydrocarbons and its activity as a dehydrogenation catalyst.

Activated Alumina as a Carrier

While activated alumina is a good dehydrogenation catalyst in itself, its greatest usefulness lies in the fact that it is an excellent carrier or support for materials which are chemically active but do not possess the physical structure necessary for a successful dehydrogenation catalyst.

When other catalytic substances are placed upon activated alumina the dehydrogenation prop-

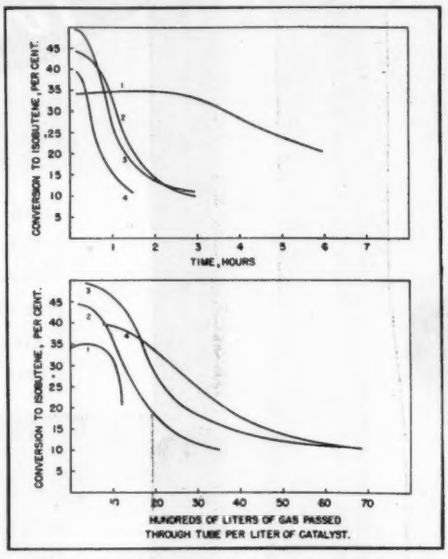

CONVERSION TO ISOBUTENE, PER CENT.
TIME, HOURS
CONVERSION TO ISOBUTENE, PER CENT.
HUNDREDS OF LITERS OF GAS PASSED
THROUGH TUBE PER LITER OF CATALYST.

Fig. 5—Dehydrogenation of isobutane over chrome-alumina catalyst (12.7% Cr)

Curve	Temp. °C.	Space velocity per min.	Ratio*	Duration of run, hours	Per cent average conversion to isobutene	Production†
1	550	3.3	.91	6	30.5	866
2	550	20	.83	3	25.0	899
3	575	35	.83	3	24.3	1,532
4	625	.76	.78	1½	21.6	1,478

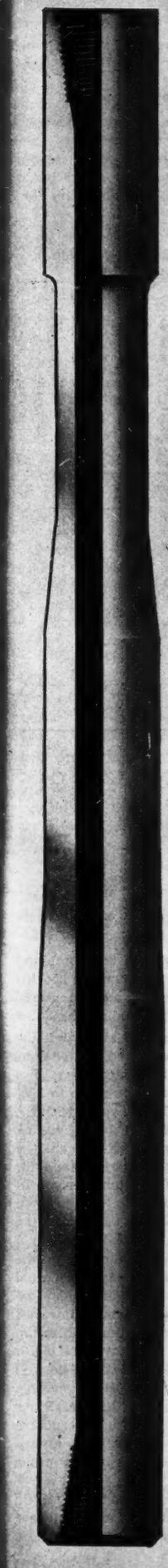
*Isobutene to total olefines. †Liters of isobutene gas per liter of catalyst.

erties of the carrier and catalyst are combined. The degree of this change depends on the specific dehydrogenation properties of the added material and upon its concentration on the alumina.

When activated alumina is used as a carrier, it is impregnated with a solution of the desired compound. A successful procedure is as follows: The alumina is heated under reduced pressure to 200° C. to expel the adsorbed air. It is covered with the impregnating solution and then cooled before releasing the vacuum. The impregnation can also be accomplished by letting the carrier stand for some time submerged in the solution at room or elevated temperatures.[7]

In many cases activated alumina improves the stability of the dehydrogenation catalyst which it supports. For example, chromium oxide in the form of an active gel is a selective dehydrogenation catalyst at about 400° C. giving conversions approximating equilibrium conditions. However, these conversions are low, because the equilibrium at such a low temperature does not favor the olefin (Figure 1); from this standpoint it would be well to operate at higher temperatures. However, this catalyst is unstable at 500° C. or higher. Since activated alumina has an appropriate structure which is stable above 500° C. it constitutes a very suitable carrier for chromium oxide, or for other catalysts.

Some contact materials are such active catalytic agents that the reaction is carried too far, so that splitting of the carbon to carbon bond occurs.



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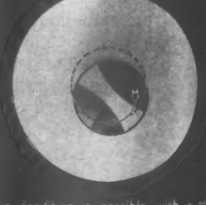
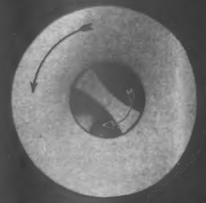


Above condition is possible with a rotat drill collar and a non-rotating drill, or wi rotating drill and a non-rotating collar. W these methods, true boring at its best matter of the machinists' judgment and perience in making the proper allowance the deflection of the drill bar due to gra These methods of manufacturing contribute the tendency to bore drill collars off cen



This is the condition that exists when the and drill collar rotate in opposite direct The drill has a natural inclination to see follow the true geometric axis of the collar. This method results in a balanced section which permits true rotation of the collar when in operation at the bottom drilling string

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Mounting such catalyst on the activated alumina carrier modifies this activity. For example, reduced nickel oxide on pumice is very active but causes complete cracking to carbon and hydrogen at temperatures as low as 450° C., whereas nickel on activated alumina gives favorable conversions

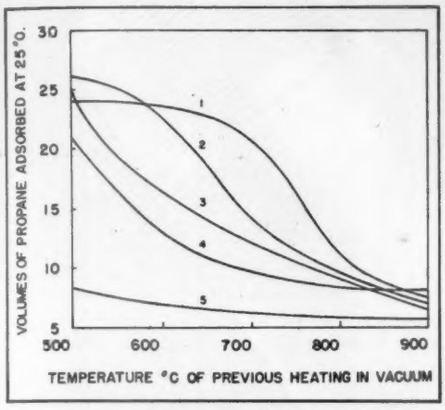


Fig. 6—Adsorptive capacity of alumina type catalysts

Curve	Catalyst	Per cent Cr
1	Chromic acid alumina	15.1
2	Chromic acid alumina	1.9
3	Activated alumina	0.0
4	Sodium bichromate alumina	7.5
5	Sodium bichromate alumina	15.0

and ratios. Similarily, iron oxide when prepared as an active gel favors disruption of the hydrocarbon molecule, but is a selective dehydrogenation catalyst when supported by activated alumina.

Catalysts consisting of reduced nickel, oxide of chromium, iron, vanadium, and zinc, and many other active materials, supported on activated alumina have been tested. Representative results, listed in Table 2, illustrate the suitability of activated alumina as a carrier.

TABLE 2—DEHYDROGENATION OF ISOBUTANE WITH ACTIVATED ALUMINA AND ADDED COMPOUNDS

(Space velocity 3.3 per minute)

Added compound—	Temp. C.	Per cent conversion to butene Maximum 3 hr.	Av.	Ratio*
None	600	36.2	32.0†	.80
Chromium Oxide	550	38.0	36.2	.90
Vanadyl Sulphate	550	33.0	31.0	.89
Iron Oxide	550	37.2	35.2	.85
Zinc Oxide	600	35.2	26.7	.75
Reduced Nickel	500	14.9	...	.90

*Isobutene to total olefins. †12-hour average.

Chromium Oxide on Activated Alumina

Chrome-alumina catalysts are prepared by impregnating activated alumina with an aqueous solution of chromic acid or one of its salts, such as sodium or potassium chromate or bichromate. Catalysts prepared with alkali chromium salts give most satisfactory conversions with concentrations of about 2 per cent chromium; if the salt content is increased beyond the optimum figure the activity of the catalyst decreases owing to the increasing formation of an alkali aluminate.

The presence of alkali may be avoided by the use of chromic acid or chromium nitrate in the preparation of the catalyst. In this manner, on raising the chromium concentration to 10 or 20 per cent, a catalyst is obtained which is active at temperatures 50° to 70° C. lower than for activated alumina containing little or no chromium oxide. This flexibility is of advantage, because it enables a choice of catalyst to suit the particular hydrocarbon from the standpoint of equilibrium and thermal stability. For example, normal butane, which is less stable thermally than isobutane or propane, is best dehydrogenated by means of a catalyst of high chromium concentration, which is active at lower temperatures. Propane, which is stable at higher temperatures, is on the other hand preferably dehydrogenated by means of a catalyst of lower chromium concentration.

Figure 5 gives conversion data for isobutane using a chrome-alumina catalyst containing chromium oxide (12.7 per cent Cr.). In comparing the conversion curves for this catalyst with the conversion curves for plain activated alumina (Figure 2), two important points may be noted: First, that the temperatures are lower, and second, that the runs are shorter in duration. However, higher initial conversions, better ratios of isobutene to total olefins, and higher yields result with the chrome-alumina catalyst. The yields are 75 to 80 per cent at space velocities between 20 and 75 per minute and corresponding temperatures in the range 550° to 600° C.

A comparison of the behavior of the three hydrocarbons over representative alumina catalysts, with and without chromium oxide, is given in Table 3. Suitable operating temperatures were selected in each case for the particular hydrocarbon feed and catalyst, at a uniform space velocity of 20 per minute. The conversions and ratios of olefins are average values over the periods of time listed; these periods correspond roughly, as may be seen by comparison with Figures 2, 3, and 5, to those during which the catalysts are reasonably active, and therefore to practical lengths of runs, at this space velocity.

Properties Related

Experiments have shown that the catalytic activity of activated alumina closely parallels its adsorptive capacity. Hence, in view of the change in activity produced by adding chromium compounds

SAFETY— When Breaking a Pipe Joint

Frequently the location and position of the workman on the rig is as important from a safety standpoint as the equipment involved. The accompanying photograph is an excellent illustration of the position to take to break-out a joint.

The weight of the pipe is resting on the slips and the men are placing the tongs on the pipe. The derrick man, left, is assisting the pipe racker (right center) to latch the lead tongs while the back-up man has already latched and engaged the back-up tongs. Notice that the pipe racker has his

left arm stiff and his head and body well away from the lead tongs so that in case of an accidentaly engagement of the automatic cathead clutch he will be thrown in the clear instead of being hit by them.

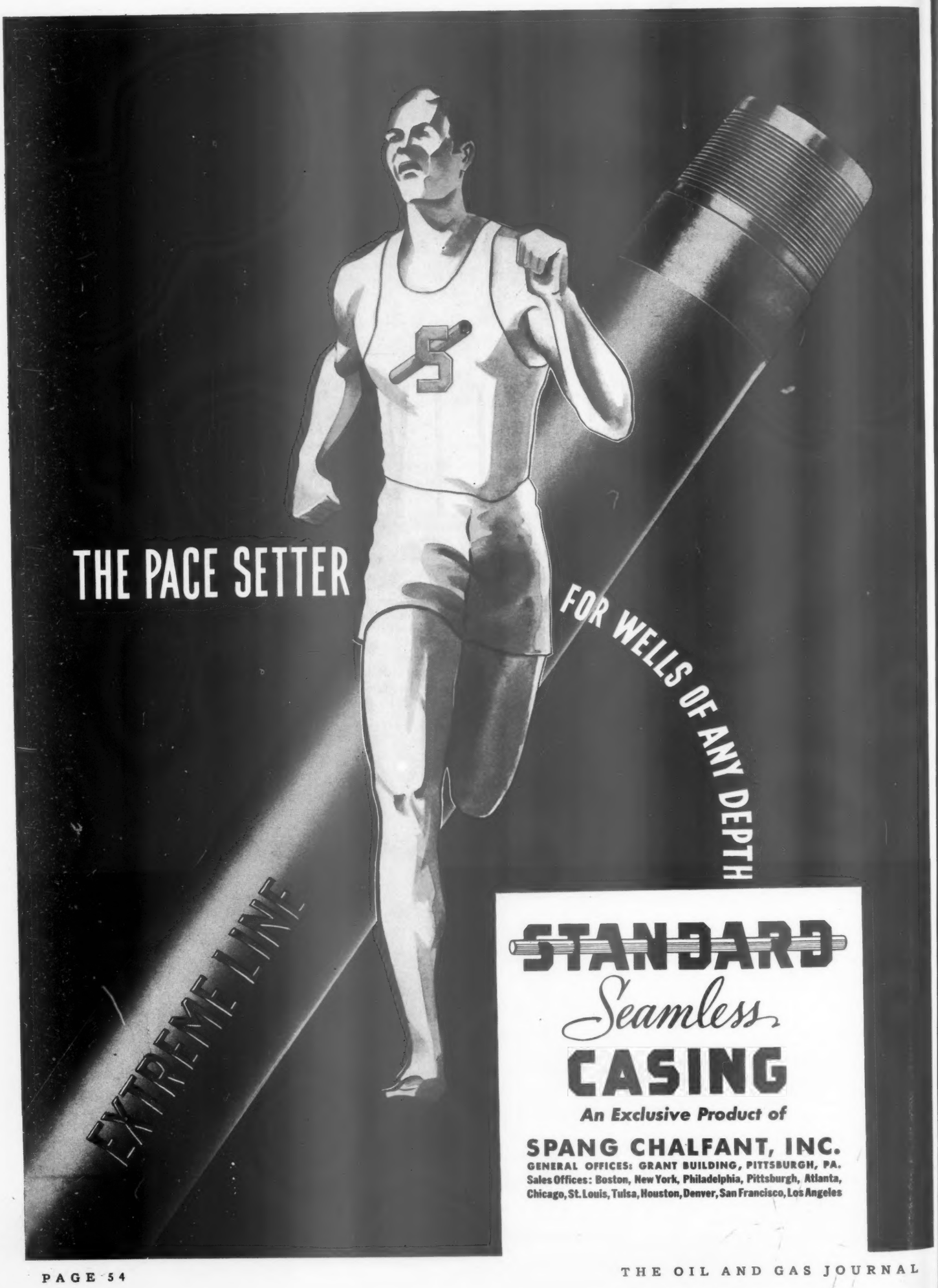
To make the lead tongs bite, the derrick man will pull them toward him as far as the line will allow and a slight pressure of the pipe racker's right hand will engage them. The derrick man will then step back so as not to be between the tongs. The driller (extreme right) will then engage the automatic cathead clutch, throwing enough strain on the jerkline to break the joint. After the joint is broken by the automatic cathead, the driller will engage the rotary clutch, turning the pipe below the break to the right and unscrewing the kelly joint from the drill stem.

Failure of the joint to break and engaging the rotary clutch would cause a sudden snapping strain to be put on the jerkline, but in case it breaks the snub-line, left foreground, will prevent the tongs from turning more than a few degrees.

In order that the driller may see the joint and observe if it has broken after engaging the cathead clutch, the pipe racker is standing out of the driller's line of vision. Failure of the driller to see that a joint has not broken is sometimes the cause of a severe injury to the men.

This operation is performed every time a new joint is added and every time a stand is broken-out during a trip.

The hose in the left foreground has evidently been used to wash the mud from the kelly joint and drill pipe.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to activated alumina, tests of adsorptive capacity have been extended to the catalysts.

TABLE 3—DEHYDROGENATION OF PROPANE, NORMAL BUTANE AND ISOBUTANE WITH ALUMINA TYPE CATALYSTS

(Space velocity = 20 per minute)

	Activated Alumina 3-hour period	Act. Alumina +2% Cr 1½ hour period	Act. Alumina +12-15% Cr 1-hour period
Propane			
Temperature, °C.	650	625	575
Average conversion to isobutene, %	23.6	37.4	25.8
Average ratio of propene to total olefins	.87	.95	.95
Normal Butane			
Temperature, °C.	650	625	550
Average conversion to isobutene, %	(*)	22.0	30.1
Average ratio of normal butene to total olefins	(*)	.60	.97
Isobutane			
Temperature, °C.	650	625	550
Average conversion to isobutene, %	31.0	35.5	37.0
Average ratio of propene to total olefins	.74	.78	.83

* Excessive decomposition to carbon and hydrogen; in the other eight examples, carbon formation was only 1 to 4 per cent (feed basis).

These measurements, summarized in Figure 6, show that the more active catalysts have the greater adsorptive capacity. The presence of an alkali radical in high concentrations (for example, from the use of sodium bichromate), which as above stated is detrimental to the activity of the catalyst, is also detrimental to the adsorptive capacity (compare curves 4 and 5 with curve 3). On the other hand, the introduction of chromium as chromic acid materially improves the adsorptive capacity (curves 1 and 2). The addition of 15.1 per cent chromium, as chromic acid, produces a catalyst which does not materially decrease in adsorptive capacity until heated to temperatures in excess of 700° C.

Regeneration of Catalysts

The activity of these catalysts decline as a result of the accumulation of carbon upon the surface and in the pores of the catalyst during the dehydrogenation process. To restore the original activity of the catalyst, this carbon deposit must be periodically removed. The removal is best accomplished by treating the catalyst at a temperature of 600° to 700° C. with a stream of air. The heat of combustion is sufficient to cause a sharp rise in the temperature of the catalyst bed, and the air flow must be carefully controlled in order to keep the temperature within safe limits, of the order of 700° C. The time necessary for regeneration can be reduced to one-half or one-third (without at the same time permitting excessive temperatures) by diluting the air with an inert gas such as nitrogen or carbon dioxide, or in some cases, steam; these diluents serve to increase the rate of removal of the heat generated in the tube.[6,7]

In actual practice the course of the regeneration may be followed by the course of the "hot spot" or combustion zone which progresses from the inlet end of the tube to the exit end. When this "hot spot" reaches the exit end, there is a sharp decline in temperature and decrease in the carbon dioxide content of the effluent gas; the catalyst is then ready to re-use.

Both the plain activated alumina and the chrome-alumina catalysts have been regenerated in this manner over 200 times with very little loss in activity.

Patents

Various features of these processes are covered by patents and pending applications in the United States and abroad.

Acknowledgment

The authors wish to express their appreciation to Messrs. F. F. Rust and C. O. Hurd for their assistance in this work, and to the Shell Development Co. for permission to publish this paper.

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D. Pyzel, vice president, Shell Union Oil Corp., has been elected a vice president.

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Manufacture and Use of Substitute Motor Fuels Is Proving Costly in Europe

By DR. GUSTAV EGLOFF
Universal Oil Products Co.

SUBSTITUTE MOTOR FUELS

Part of paper read before the petroleum division of the American Chemical Society meeting in Milwaukee this week in which the author stated that the consumption of substitutes for petroleum gasoline in Europe in 1937 composed of synthetic gasoline and benzol from coal, alcohol, and oil shale amounted to 203,306,622 tons or 15,250,000 bbls., or about 18 per cent of the total gasoline consumption.

In addition to the liquid substitutes given, he states there are two other types produced from the gases of coal and wood. It is estimated for 1938 that compressed and producer gas from coal and wood will substitute for 243,000 tons of petroleum gasoline or 1,823,000 bbls.

For the year 1938 about 25 per cent of the total European requirements for motor fuel will come from substitutes.

The increasing tendency of nations to become autonomic in both thinking and action has been strongly felt by the author during the past 10 years of European visits. As part of this nationalism, substitute motor fuels play an increasingly important role.

Countries such as Germany, England, France, and Italy having no material petroleum resources, are researching feverishly to utilize their own potential motor fuel supplies from coal, vegetables, cereals, wood, natural gas, and oil shale. This research is not directed solely for the purpose of producing fuel for motor vehicles such as airplanes, pleasure cars, buses, trucks, and boats, but the desire to become nationally self-sufficient and to keep people employed as well as utilizing their own resources. The cost of producing substitute motor fuels is not specifically involved since gasoline produced from crude oil is markedly less in cost than any of the sources enumerated comparing overall motor vehicle performance.

A number of European nations directly and indirectly subsidize indigenous motor fuels through taxes on imported motor fuels, partial elimination of taxes on the fuels and on the vehicles using nationally produced fuels, and in some cases direct part payment on the vehicles using substitute fuels.

To give a bird's eye view of European crude oil production, motor fuel consumption, motor vehicles, alcohols (methanol, ethanol), coal and forest resources, Table 1 has been compiled to indicate the interplay of economic forces that motivate nations in their self-sufficiency programs.

The primary source of motor fuel in the world today is crude oil. Over 2,000,000,000 bbls. of petroleum were produced during 1937 from which about 775,000,000 bbls. of motor fuel were derived by distillation and cracking. Substitute motor fuels consist of compressed gases, liquids, and solids from coal, alcohols (methanol and ethanol), producer gas from wood and coal generators on motor cars, compressed natural gas and oil shale. Acetylene, cracking of ammonia, and hydrogen have been used in an experimental way.

Motor Fuels From Coal

The primary substitute motor fuel in Europe is derived from the hydrogenation of coal and carbon monoxide. The synthetic liquid motor fuel production in Germany will be at the rate of about 17,000,000 bbls. a year from the units of the two processes now operating, under design, and construction. In England the rate of direct coal hydrogenation to gasoline is about 1,300,000 bbls. a year. France is operating a 110,000-bbl. a year catalytic unit to convert water gas to motor fuel. No other European countries are using these processes at the present time. For European conditions the various sources indicate that the cost per U. S. gallon of motor fuel produced by either coal or carbon monoxide hydrogenation is about 18 cents.

The high temperature carbonization of coal has been the primary source of benzol motor fuel for years. The products of high-temperature treatment of coal are gas, coal tar, and metallurgical coke. The gas is scrubbed with oil or activated carbon and the coal tar distilled to recover the benzol motor fuel content. Benzol is produced in the gasification of coal with a maximum yield of 3 gallons per ton of coal gasified. This type of motor fuel has an octane rating of over 90 and is used as a blending agent for lower grade fuels to raise their antiknock value.

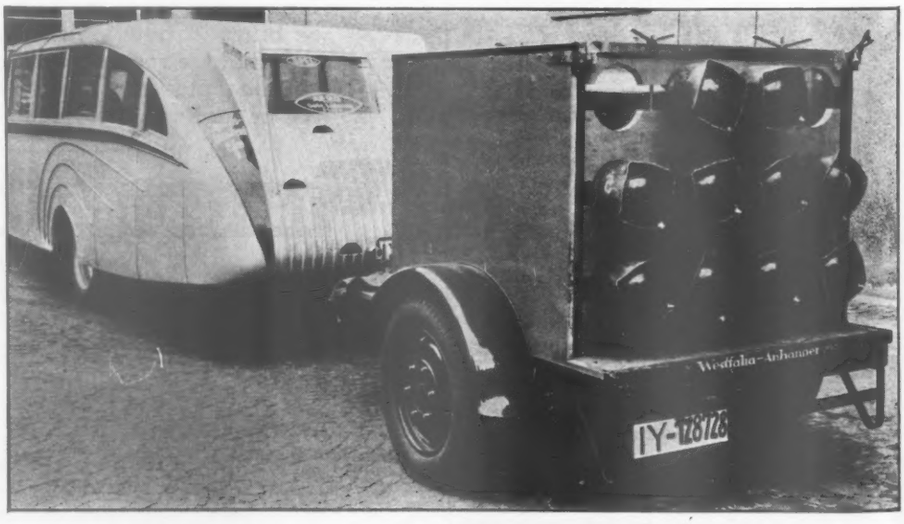
Benzol and toluol, which are present in benzol motor fuel, in war time are diverted largely toward explosive use.

The production of benzol fuel in the different countries of Europe is shown in Table 2.

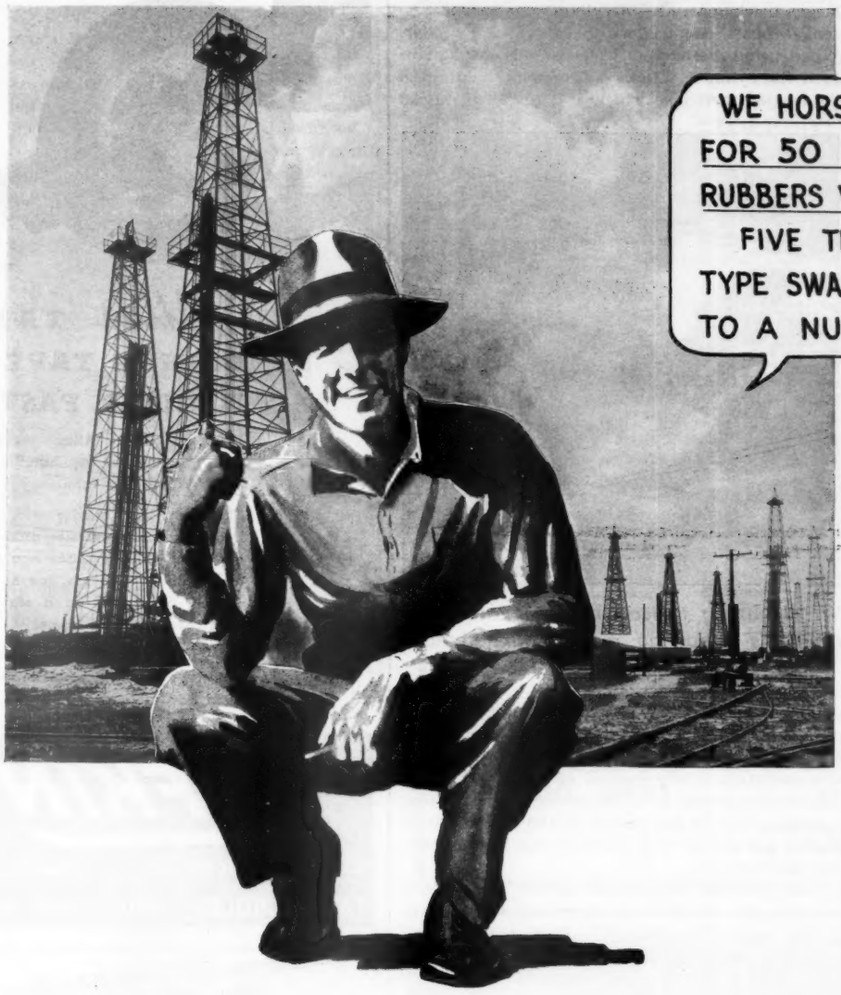
The cost to consumers of Europe was $49,463,000 more for benzol motor fuel than it would have had to pay for gasoline, due to loss of taxes, governmental subsidies, and benzol production costs. Or expressed another way, 20 cents more for each gallon of benzol fuel consumed.

The sources of substitute motor fuels in Europe which are increasing are combustible gases from coal carbonization, coal hydrogenation, and Fischer-Tropsch hydrogenation of carbon monoxide to hydrocarbons, natural gas, and the cracking process. The gases used for motor fuel are coal gas, methane, ethane, propane, and butane, which are compressed depending on the type gases up to 4,000 pounds per square inch.

Motor vehicles are converted into compressed gas type at a cost of $150 to about $300 depending on the size.[17 4] The primary changes are (1) installation of racks to hold the steel cylinders (each weighing about 115 pounds empty; when filled with propane-butanes at a pressure of 150 pounds per square inch one weighs 215 pounds or a net of 100 pounds of compressed gas[4]—



German passenger bus equipped with cylinders of compressed gas



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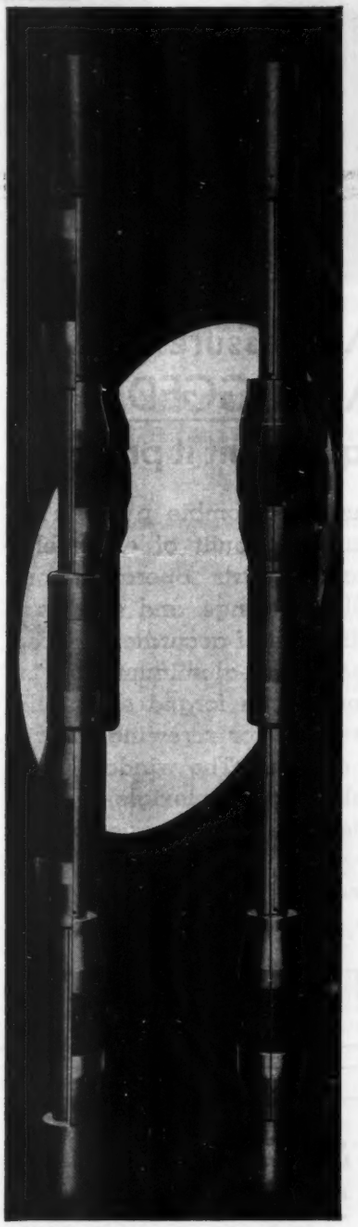

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equivalent to 18 gallons of gasoline). Some of the larger trucks carry eight cylinders and some passenger buses use trailers to carry the cylinder. When using methane at 3,000 pounds per square inch the cylinder weighs 155 pounds, holding 28 pounds of methane, which is equivalent to 4.6

Wood-burning taxicab used in Paris. The driver is supplying a charcoal-anthracite coal mixture

gallons of gasoline.[4] When using compressed city gas, the cylinder content in terms of gasoline equivalency is about 1.8 gallons.[6] (2) The heart of the operation is the control of the pressure reduction by means of a regulating valve, so that a steady flow of gas passes to the motor. (3) A special gas-air mixer is used instead of the gasoline carburetor.

The greatest development in the use of compressed gas has been in Germany where over 150,000 tons[17 18] (estimated) of gasoline during 1938 will be replaced by the use of compressed gas, which is available at many filling stations[21] similar to gasoline stations.

Filling stations[7] dot Germany in a network which supply city gas, methane or propane-butanes, directly by filling the cylinders on the motor vehicle or replacing the empty ones. Dependent upon the type of compressed gas, whether city, methane, or propane-butane, the distances traveled by a given vehicle when using two cylinder storage tanks are about 25, 85, and 225 miles, respectively, before it is necessary to refill them.[4]

It is estimated[19] that over 25,000 German mo-

Passenger bus showing motorman's place and wood-burning stove used in France

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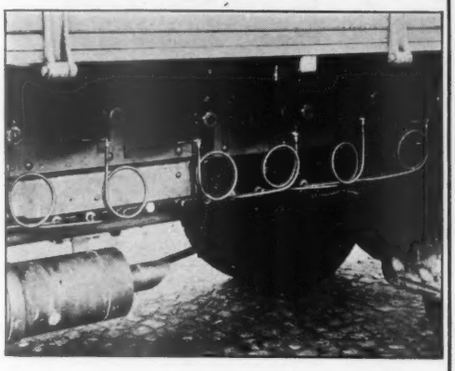
tor vehicles are using about 250,000 cylinders as storage tanks for the compressed gas.

Italy has developed a natural gas field near Milan made up largely of methane. This gas is compressed at 3,000 pounds per square inch into steel cylinders and is distributed at eight filling stations which supply about 500 buses and trucks in the Milan and Florence area.[4] At the present



Header connection for steel cylinders on trucks to deliver compressed gas to motor in Germany

time (July 1, 1938) in Italy, natural gas as motor fuel is substituting at the rate of about 40,000 tons of petroleum gasoline a year. It is expected that within two years the use of methane from natural gas and coal carbonization will be fourfold greater than it is now.

The use of motor vehicles burning compressed gases is subsidized by the governments of Germany and Italy by reduction of taxes.[3] [5] The tax on a U. S. gallon of gasoline shipped into Italy

Compressed methane gas filling station in Italy. The gas is supplied at 4,500 pounds per square inch

is 51 cents while Germany charges 36 cents. On the basis of 59.6 cents a gallon for motor fuel in Germany, of which 36 cents is a tax on imported gasoline (it lands in Hamburg at 11 cents an Imperial gallon or 9 cents per U. S. gallon from the United States) the cost of city gas, motor methane and propane-butanes in Germany compared on a gallon of gasoline basis is 43, 41 and 61 cents.[5]

(Continued on Page 62)

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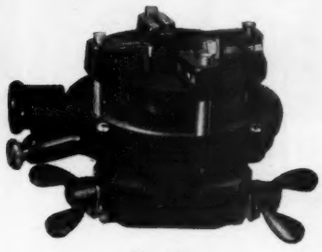

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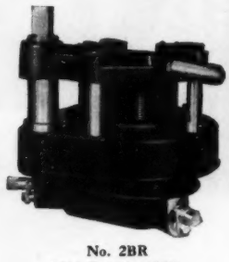

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It is estimated that the use of compressed gas in all Europe during 1938 will substitute for about 250,000 tons of gasoline.

Alcohol Motor Fuels in Europe

The increased use of power alcohol was demanded in Central Europe from 1930 to 1937 through enactment of laws. Power alcohol is supported by heavy governmental subsidies. Alcohol replaces imported motor fuel and is fostered by the national self-sufficiency programs. Power alcohol consumption increased in Europe during 1930 to 1936 from 59,000 to 648,000 tons. However, a sharp decline took place in 1937 with the use of only 510,000 tons, a drop of 25 per cent. A more drastic drop is indicated for the year 1938. Alcohol as a source of power may be eliminated due to the staggering economic losses and its diversion to other uses as well as its encroachment upon the food supply of the various nations.

TABLE 1—CRUDE OIL, COAL AND ALCOHOL PRODUCTION, MOTOR FUEL CONSUMPTION, FOREST AREA, AND MOTOR VEHICLE USE IN EUROPE DURING 1937

Country—	Motor car[8] registration	Motor fuel[25] consumption—bbls.	Crude oil[28] production—bbls.	Coal[10] production (metric tons)	Alcohol[12] used as motor fuel (metric tons)	Forests[20] total areas (sq. miles)
United Kingdom	2,411,300	44,200,000	.....	228,990	16,000	4,700
France	2,200,000	25,000,000	532,000	46,146	153,000	34,000
Germany	1,445,700	20,000,000	3,077,000	208,945	210,000	54,600
Russia	514,400	24,000,000	199,636,000	81,000	.....	3,014,500
Italy	429,700	5,200,000	150,000	988	37,000	4,700
Belgium	220,400	4,600,000	.....	27,876	.....	.....
Sweden	192,700	4,000,000	.....	424	15,000	100,400
Netherlands	147,800	3,500,000	.....	12,893	.....	.....
Spain	125,000	2,900,000	.....	7,320	.....	.....
Czechoslovakia	95,000	1,820,000	185,000	28,432	50,000	18,800
Norway	76,400	1,600,000	.....	.....	.....	27,000
Austria	47,400	970,000	[11]33,000	3,141	2,000	.....
Finland	44,400	800,000	.....	.....	.....	84,200
Poland	34,300	600,000	3,870,000	29,768	8,000	31,000
Rumania	26,500	700,000	63,533,000	1,928	.....	29,300
Hungary	21,200	590,000	.....	7,932	10,000	2,100
Jugoslavia	14,600	.....	.....	4,476	4,000	47,800

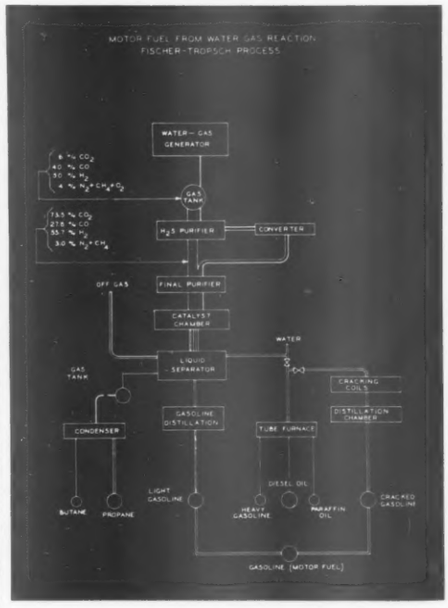
The economic strain upon the governments of Europe due to power alcohol use has been heavy. A loss of income of about $105,000,000[3] was incurred during the year 1937 alone, based upon subsidizing the producers, tax losses, and higher fuel costs. These losses resulted from the marketing of 510,300 tons of alcohol out of a total 11,882,600 tons or 4.3 per cent of the motor fuel used in Europe.

The data showing the power alcohol consumption and percentages of the total motor fuel consumed during 1937 in European countries are shown in Table 3. The percent of alcohol used in motor fuel ranged from 0.3 per cent for the United Kingdom to 22.7 per cent for Lithuania.

Great Britain has never compelled the use of power alcohol for blending purposes in order to subsidize the agricultural industries. This is probably due largely to the fact that the raw material, molasses, must be imported.

The British Government further encourages alcohol motor fuel blends by exempting both their alcohol and benzol content from the import duty on motor fuel, which for years was 8d (about 16 cents per U. S. gallon) per Imperial gallon. Recently the tax on imported motor fuel was increased to 9d (18 cents) or 15 cents per U. S. gallon. The principal alcohol blends sold in England have been able, by reason of tax exemptions, to compensate for the higher alcohol cost of about 7.6 cents per Imperial gallon of blend due to the governmental subsidy granted alcohol itself to the limit of 17.5 cents per Imperial gallon (14.6 cents per U. S. gallon). Alcohol blends have not occupied a significant position in British motor fuel markets in competition with gasoline, as shown by the fact that alcohol in the United Kingdom represents only 0.3 per cent of the total motor fuel consumed.

Increased gasoline taxes have formed only a part of the encouragement given to power alcohol. In most European countries alcohol is heavily sub-



Fischer-Tropsch method for making motor fuel by water-gas reaction

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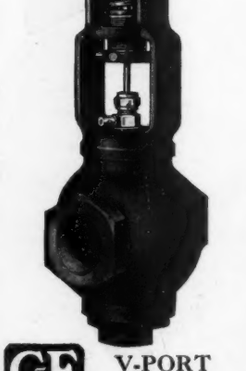

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With both Flow-Control and Pressure-Control Regulators *this valve is* APPROVED

THE V-Port gradual-opening valve here shown is thoroughly dependable with flow controllers and instrument-type auxiliary-controlled pressure regulators and with many other forms of refinery equipment. Has many applications also in other industries. Made for either direct action (closed by diaphragm pressure) or indirect action (opened by diaphragm pressure). Sizes 1/2 inch up, all with ample diaphragm area to give positive unfailing response.

THE CHAPLIN-FULTON MANUFACTURING CO.

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sidized, i.e. Germany 39 cents per gallon and France 36 cents per gallon; the government monopolies pay higher prices to distilleries than those charged to distributing companies. The monetary losses entailed due to power alcohol use in the countries of Europe during 1937 was $104,040,500.

Europe's power alcohol policies have given motorists difficulties in operating their vehicles which have been little recognized in the United States. The instability of alcohol supplies has caused repeated changes in the octane ratings of fuel sold the public. No sooner do car operators and automobile manufacturers adjust engines to run on fuels of a given antiknock value, than an increase or decrease in the supply of power alcohol results in the raising or lowering of the antiknock value of fuels, hence readjustments are necessary.

Recent events have confirmed previous analyses showing that the primary reason for compulsory use of alcohol in motor fuel in Europe is the desire of such countries to develop and maintain their alcohol industries for the purpose of national defense, not merely as protection against failure of petroleum supplies in wartime due to blockades, but more particularly to assure adequate capacity in wartime for manufacture of a prime raw material in making munitions—alcohol.[1] Significantly, the war scare which gripped all Europe during 1937 was accompanied by a sharp decline of alcohol used in motor fuel. This decrease was far too great to be explainable solely by crop shortages in sugar beets, the main source of alcohol in France and Italy, and must be attributed to the large quantities of alcohol consumed for armament purposes.

Producer Gas From Wood and Coal

Wood and coal as gas producers are not primary sources of motor fuel even in those countries urging their wider adoption. Despite drastic laws and government subsidies, the number of wood-burning motor vehicles is relatively small. The total number in Europe is estimated to be about 9,000.

Wood as a power substitute for motor transport is a factor in those countries where the natural resources encourage its use. The use of wood is desired primarily in France, Germany, and Italy to replace imported petroleum.

It is estimated that 450,000,000 pounds of wood were substituted for the equivalency of 18,000,000 gallons or 53,000 tons of gasoline.

A wood gas generator capable of operating a 90-horsepower, 5-ton truck weighs 1,850 pounds. When using a charcoal gas generator the weight is 1,575 pounds, but the price of charcoal is about $2.18 higher per 100 miles of operation than wood, which nullifies the excess loading possible in that type of truck. The general overall performance of the engine using charcoal is considerably better than that using wood due to the fewer cleanouts necessary and less water produced.

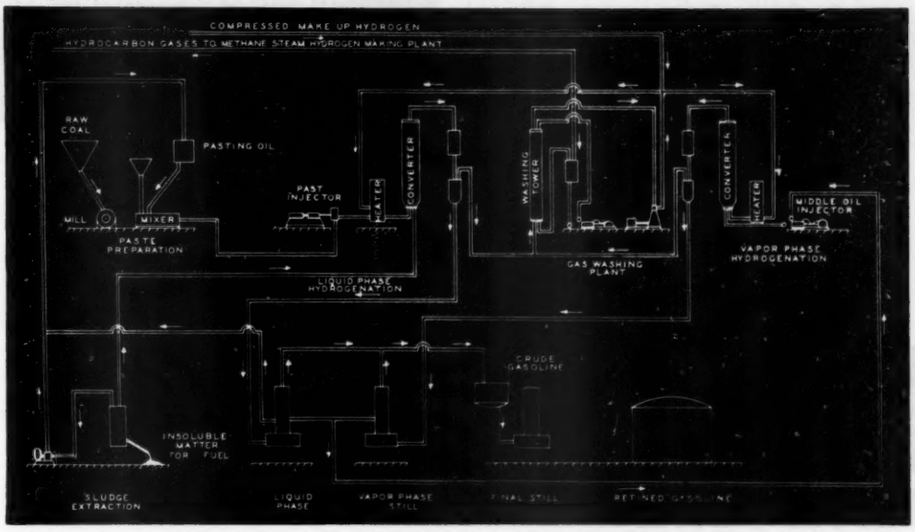
The loss of power output based upon the heat

TABLE 2—SUBSTITUTE BENZOL MOTOR FUEL PRODUCTION[14]

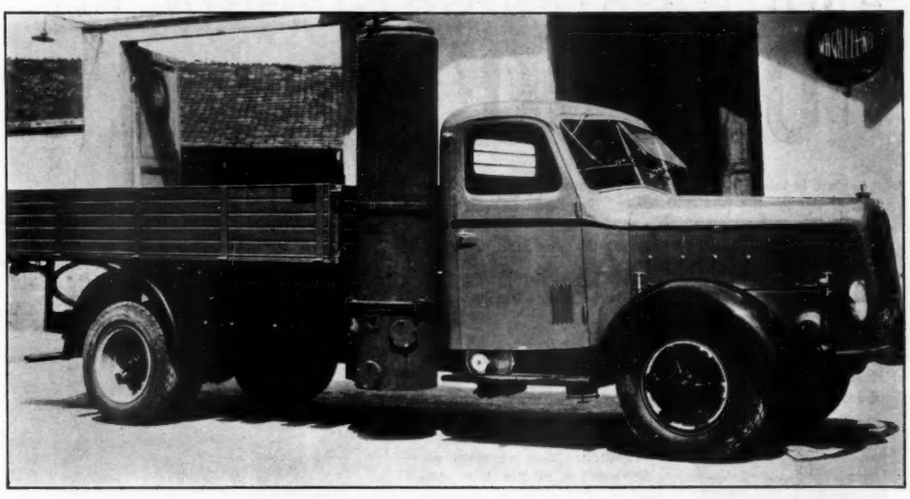
Country—	Benzol (metric tons)
Germany	430,000
Czechoslovakia	12,000
Hungary	3,100
Poland	10,000
Belgium	36,700
France	80,000
United Kingdom	230,000
Austria	8,200
Sweden	500
Holland	10,800
Finland	200
Switzerland	3,000
Total	824.500

TABLE 3

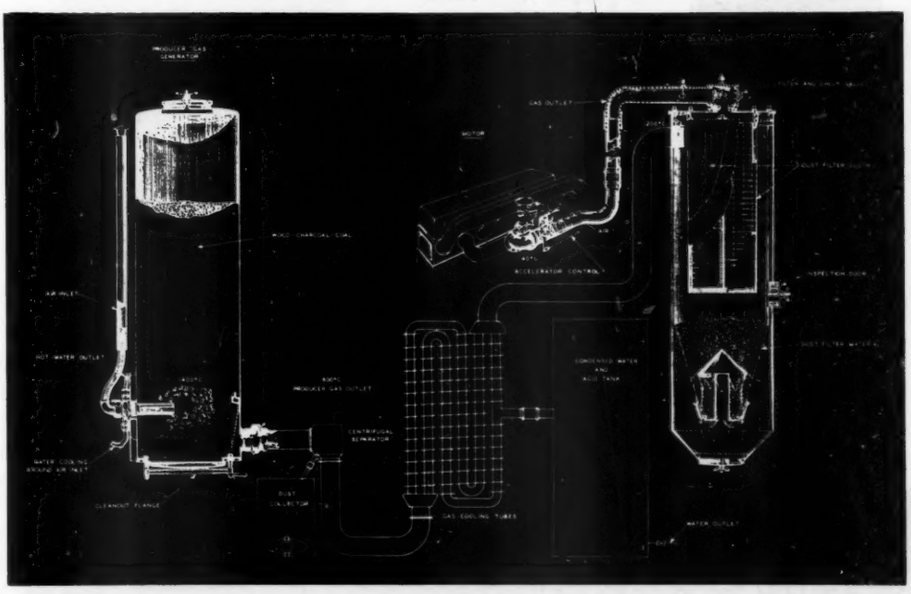
Country—	Power alcohol consumption (Met. tons)	Total light motor fuel consumption (Met. tons)	Percentage of alcohol
Germany	210,000	2,640,000	8.0
France	153,400	2,827,000	5.4
Czechoslovakia	50,600	220,000	23.0
Italy	37,000	483,500	7.6
United Kingdom	16,000	4,840,000	0.3
Sweden	15,200	503.200	3.0
Hungary	10,500	69,100	15.2
Poland	8,000	98,200	8.1
Jugoslavia	3,800	30,200	12.6
Austria	2,300	146,300	1.6
Latvia	2,200	19,400	11.1
Lithuania	1,300	5,700	22.7
Total	410,300	11,882,600	4.3



Method for making motor fuel by hydrogenation of coal



Wood-burning stove on truck in Italy



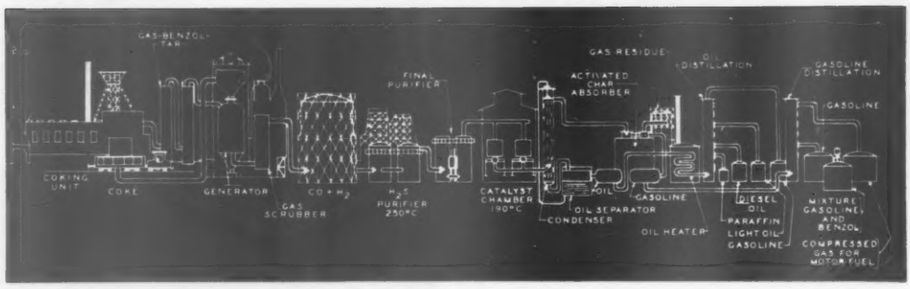
Producer-gas motor fuel system

content of wood gas in comparison to gasoline is about 30 per cent. The combustible constituents of the wood gas are 30 per cent carbon monoxide and 1 per cent methane.

The inconvenience and delay in starting are other objections, and when combined with the delays necessitated by cleaning and reduced efficiency, the overall picture of wood as a motor fuel compared to the use of gasoline does not look favorable, only as necessity demands its use.

Charcoal and Anthracite Coal

The gas producer motor vehicle may operate on brown coal, lignite, anthracite coal, and peat coke alone or mixed with wood or wood charcoal. One taxicab in Paris operates on producer gas from a mixture of 20 per cent charcoal and 80 per cent anthracite coal. Gasoline was used to warm up the motor, while the charcoal-anthracite mixture was ignited from a torch dipped in oil. It actually took about five minutes before the taxi was in full smooth running order. (The author rode about 100 miles in this taxi.) In general, it has been found that the use of coal gives somewhat more difficulty in operation than dried wood or wood char.



Making motor fuel from coal carbonization and catalytic water-gas reaction

Brown Coal, Lignite, and Lignite Briquettes

Brown coal and lignite fuels on account of their high water content should be converted to coke. The resultant cokes are similar to wood charcoal in activity but have considerable ash, giving rise to clinkers. In forming brown coal briquettes, tar decomposition is accomplished by precarbonization in order to remove volatile matter.

Coal in general has not met with favor as a producer gas fuel because of its high gasification temperature. Nevertheless, Belgium favors an 80:20 mixture of anthracite and charcoal, claiming a lower fuel expense than when using city gas. The disadvantages which have halted the use of coal are slag formation leading to sintering of the ceramic lining of the generators, and discharge of high percentages of sulfur dioxide in the exhaust gases. It was impossible to obtain information as to the number of coal burning vehicles in Europe.

Oil Shale Motor Fuels

Oil shale in Europe is found in the following countries: Great Britain, Estonia, Finland, France, Latvia, Sweden, Spain, and Czechoslovakia. The latter countries so far have little or no commercial production. Since these countries have practically no crude oil, the exploitation of the shale deposits has become increasingly important from an economic standpoint. Table 4 shows the amounts of shale motor fuel produced in Europe during 1937.

TABLE 4—OIL SHALE PRODUCTION IN EUROPE

Country—	Shale motor fuel (metric tons)
United Kingdom	26,000
Estonia	7,300
Finland	2,700
France	1,500
Latvia	1,300
Total	38,800

The Scottish oil industry started about 90 years ago yielding many products such as motor fuel, kerosene, Diesel oil, wax, and ammonium sulfate. The reserves are estimated at 280,000,000 tons or a potential 6,160,000,000 gallons of oil, assuming 22 gallons of oil per ton of shale. The shale oil industry antedates the petroleum and many of the processes developed in this industry were subsequently applied to crude oil. The output of oil shale annually (1937) is approximately 1,400,000 tons from which 100,000 tons of marketable products were obtained. The shale motor fuel industry is protected by an 18-cent tax per Imperial gallon (15 cents per U. S. gallon) against imported gasoline, but even this protection has not served to stabilize the industry.

Due to the more efficient motors of today, the fuel produced from shale oil has required increased blending with higher octane fuels or cracking to raise the octane rating, which in turn increases the cost of production. The motor fuel yield is at the rate of about 26,000 tons a year. It is estimated that the cost of producing motor fuel from oil shale is about 15 cents per U. S. gallon.

Table 5 shows the extra costs of shale gasoline

Straight Talk

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Here is the Bit that has been making hole history in the Gulf Coast for the past half year. Hundreds of runs have proven its effectiveness in straightening crooked holes and in drilling straight holes faster. Ask the men who use them.

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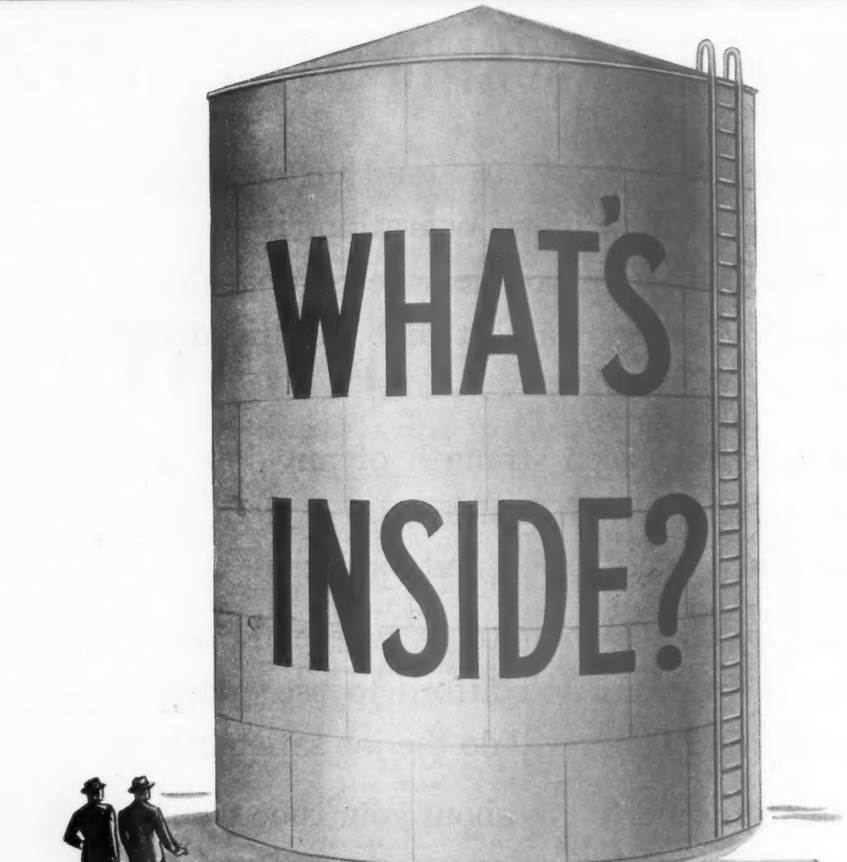

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Galena Park, Tex. (Port of Houston)
Corpus Christi, Texas

above imported gasoline, in losses in taxes, government subsidies, and production costs for the countries where it was marketed during 1937.

TABLE 5—SHALE MOTOR FUEL

Country—	Cost above imported gasoline	Extra cost/metric ton of motor fuel
United Kingdom	$1,309,000	$50.00
Estonia	282,500	37.00
Finland	98,000	36.30
France	105,500	70.00
Latvia	53,500	41.00
Total	$1,848,500	

The production and use of shale motor fuel has cost the consumer and governments about 15 cents per U. S. gallon above that of imported gasoline due to losses in taxes.

Ammonia, Hydrogen, and Acetylene as Motor Fuel Substitutes

The desperate desire of nations to make themselves self-sufficient in substitute motor fuels is

Methane gas filling station in Germany. Gas supplied at 5,000 pounds pressure

reflected in the experimental work going on using such substances as ammonia, hydrogen and acetylene.

Synthetic ammonia has been used in Italy as a motor fuel substitute. The ammonia is cracked into hydrogen and nitrogen by means of a so-called disintegrator (probably catalytic). Vaporization of the liquefied ammonia is accomplished by releasing the pressure in the storage tank and counteracting the refrigerating effect thus encountered, by means of a disintegrator which utilizes the heat from the motor exhaust. In Cherso, Italy, a test using a Fiat passenger car developed 31 miles per hour in a road test. As a motor fuel, the low heating value of ammonia of 4.450 k.cal. per kilogram does not lend itself to wide use. The high cost involved in the use of ammonia is another factor retarding its use.

Experiments on acetylene as a fuel indicated that acetylene cannot do the full work of a gasoline engine and that thermal efficiency is highest with dilute air-gas mixtures.

Hydrogen as motor fuel in the form of compressed gas has also been experimented with. The results so far do not look very promising.

Import Duty, Taxes, and Price of Motor Fuels in Europe

The highest gasoline prices in Europe are in Italy, Germany, and Lithuania. The prices are 76

EUROPEAN PROPORTIONS OF SUBSTITUTE FUELS, 1937

(In metric tons)

Country—	Alcohol	Benzol	Oil from coal synthetic gasoline	L.T.C. gasoline	Shale spirit	Total substitutes	Total light motor fuel consumption	Per cent substitutes
Germany	210,000	430,000	800,000	(*)		1,440,000	2,640,000	54.5
Estonia	.....	.....	.....	.....	7,300	7,300	14,300	51.0
Czechoslovakia	50,600	12,000	.....	.....	.....	62,600	220,000	28.5
Lithuania	1,294	.....	.....	.....	.....	1,294	5,700	22.7
Hungary	10,516	3,100	.....	.....	.....	13,616	69,100	19.7
Poland	7,955	10,000	.....	.....	.....	17,955	98,200	18.3
Latvia	2,154	.....	.....	.....	1,300	3,454	19,400	17.8
Jugoslavia	3,806	.....	.....	.....	.....	3,806	30,200	12.6
Belgium	.....	36,700	.....	.....	.....	36,700	408,800	9.0
France	153,400	80,000	13,000	.....	1,500	247,900	2,827,000	8.8
United Kingdom	16,000	230,000	116,000	4,000	26,000	392,000	4,840,000	8.1
Italy	37,000	.....	.....	.....	.....	37,000	483,500	7.7
Austria	2,300	8,200	.....	.....	.....	10,500	146,300	7.2
Sweden	15,247	500	.....	.....	.....	15,747	503,200	3.1
Holland	.....	10,800	.....	.....	.....	10,800	392,600	2.8
Finland	.....	200	.....	.....	2,700	2,900	112,500	2.6
Switzerland	50	3,000	.....	.....	.....	3,050	203,900	1.5
Total	510,322	824,500	929,000	4,000	38,800	2,306,622	13,014,700	17.7

Total European light motor fuel consumption including countries not enumerated above—14,344,000 metric tons. *Included under synthetic gasoline.

63, and 59.6 cents per U. S. gallon respectively. The import duty and tax per gallon of gasoline in Italy is 51 cents and for Germany 36 cents.

The detailed data of the countries on retail price, import duty, and tax are shown in Table 6.

TABLE 6—RETAIL PRICES, IMPORT DUTY, AND TAXES ON MOTOR FUEL IN EUROPE

(Cents per U. S. gallon)[25]

Country, city—	Gasoline price	Import duty	Import duty and tax
Italy, Rome	73	49	51
Germany, Berlin	59.6	31	36
Lithuania, Kounas	63.1	23.2	23.2
Bulgaria, Sofia	50	28	39
Czechoslovakia, Prague	42.4	5	16.1
Palestine, Jerusalem	41.4	20.7	20.7
Jugoslavia, Belgrade	40.9	6.7	23.5
Switzerland, Zurich	38.2	19.2	19.2
Hungary, Budapest	38	8	26
Estonia, Tallinn	38	8.1	21.1
Latvia, Riga	37.8	14.4	21.6
Greece, Athens	37.5	19.9	21.2
United Kingdom, London	36.2	15	15
Belgium, Antwerp	36	20	*20
France, Paris	31.8	18.5	19.5
Norway, Oslo	27.5	none	9.5
Denmark, Copenhagen	26.4	none	11

*Plus 9 per cent advalorem.

As a matter of contrast, the average retail price for regular grade gasoline in the U. S. was 19.5 cents a gallon of which 5 cents was tax (June, 1938).

Costs of Substitute Motor Fuels Over Petroleum Gasoline

For the year 1937 the extra cost to the consumer and state above the cost of imported gasoline[24] and losses in taxes amounted to about $235,000,000, or 32 cents for every gallon of substitute fuel consumed.

There will be an estimated loss of $300,000,000 due to the use of substitute fuels over petroleum gasoline costs (during the year 1938) to the consumers and governments of Europe.

The photographs of compressed gas used as motor fuel were furnished through the courtesy of Benzol-Verband G.m.b.H., Bochum, Germany, and Prof. C. Padovani, Instituto di Chimica Industriale, Milan, Italy. Appreciation is also expressed to Prudence M. Van Arsdell of Universal Oil Products Co. for assistance.

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Bow Island Repressuring Resumed After Overhaul

BOW ISLAND, Alberta.—Repressuring of the Bow Island gas field with surplus gas from the Turner Valley field has been resumed after the annual overhaul of the plant and equipment. The plant was shut down for about two weeks in August, the field being allowed to equalize itself. Rock pressure has been brought up to about 570 pounds, compared with 240 pounds when operations were started in August, 1930 Repressuring will be continued indefinitely, storage amounting to about 5,000,000 feet a day.

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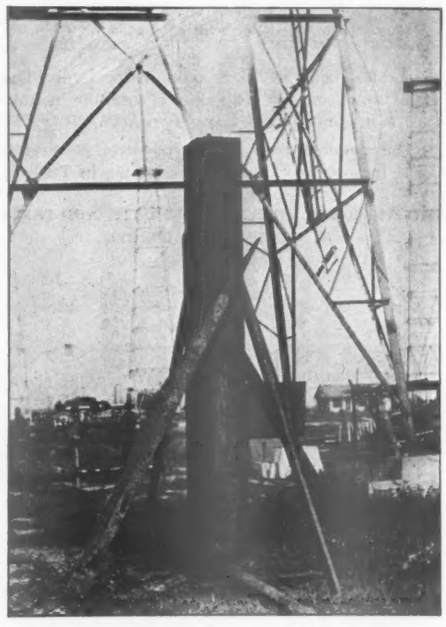
Town-lot drilling in Kilgore, Tex., makes many demands on the ingenuity of the drillers when providing all the necessary equipment in a very limited space. One such well, sandwiched in between three others already drilled, was forced to run the drilling engine exhaust out to the edge of the lease line, almost under the derrick of the adjoining well.

The usual provision of an ell on the end of the drilling engine exhaust, to turn the steam upward, resulted in spraying the adjoining well with hot



This wooden box muffles exhaust steam in crowded location without placing added strain on piping

water, making it difficult for the lease tender to flow his well. Provision of a pipe extension long enough to carry the objectionable steam above working level would introduce serious vibrational strains in the steam line, and so a wooden box, composed of four 2 x 10's nailed together in a square, was set down over the ell, three sides being left a foot longer than the fourth, and these projecting ones buried in the earth to steady the bottom. Four legs or struts then steadied the upper end, enabling the box to carry off the steam effectively, and to muffle the separate exhausts so as to produce a more even flow, allowing condensation to work down along the sides of the box.

Placing the wooden box over the exhaust end certainly minimized the danger of steam burns, and made access to the lease possible at all times.

Acting Director of Bureau of Mines on Oklahoma Oil

J. H. Hedges, acting director of the Bureau of Mines, was reported predicting in a letter to Senator Thomas increased purchases of crude oil in Oklahoma as stocks of refinable crude decrease.

"With total stocks of refinable crude close to a 17-year low, perhaps the time is approaching when a larger part of the demand will be supplied from current production. The outlook is believed to be brighter than for an increased demand due to restricted imports because, even though foreign oil be entirely excluded, sources of fuel oil other than southern Oklahoma would be readily available."

Mr. Hedges said that information of the Bureau of Mines indicated production in Oklahoma is running about 425,000 bbls. daily with a demand close to 525,000 bbls.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Sodium Tannate in Drilling Mud

I am interested in securing any articles in which there is reference made to the use of sodium tannate in drilling muds. Can you give a brief explanation of the functions of sodium tannate in mud fluid?—L. Y.

It has been found that the viscosity of drilling mud is subject to change by temperature and is likely to have an important effect on the length of time during which the mud retains a suitable drilling consistency. B. C. Craft and J. D. Exner, in the 1933 Transactions of the Petroleum Division of the A.I.M.E., have recorded that, on heating, muds examined by them decreased in viscosity at first and subsequently increased. Their work was limited to determinations with the Stromer viscometer and no provision was made for readings at different rates of shear. It has been pointed out by A. G. Loomis, H. A. Ambrose and H. T. Kennedy, in Physics, (1934, 5,213) that this defect makes it impossible to determine in detail what the real effect of temperature was. J. F. Dodge and A. C. Frietsche in the March 18, 1935, issue of The Oil and Gas Journal tell about the examination of two muds in a Bridgman viscometer and found a minimum viscosity at about 120° F. (50° C.) C. B. Kennedye in the April 4, 1935, issue of The Oil and Gas Journal reported a minimum viscosity at 100-110° F. (40° C.) for a Gulf Coast mud, and suggested the use of exhaust steam to warm mud which is otherwise too viscous. C. L. Ratcliffe in World Petroleum 1935, 6,240, describes the use of a Stromer viscometer at 600 r.p.m. and found a viscosity minimum near 130° F. (55° C.). On the other hand, bentonite suspensions exhibited an increase in viscosity which became marked above 160° F. (70° C.). M. F. Wolarowitsch and D. M. Tolstoi in Koll. Zeitschr. 1935, 73, 92, found with a kaolin suspension heated from 10° and 57° C. there was no important change in the yield value but a moderate increase in mobility.

The fact that the viscosity of drilling mud is at times a very important factor much time has been spent in experimenting with various chemicals to be added to the mud. If the mud is made alkaline by chemical treatment a difference in viscosity change was noted. With a mud containing a little waterglass (sodium silicate) the rate of rise in yield value was rather greater than with plain mud, and in most instances continued to a higher temperature. With more waterglass the temperature change became much less noticeable.

With soda ash or sodium tannate as the reagent, the temperature change was much more pronounced, both in the rate of rise and the range of temperature over which the rise was exhibited; on cooling, a permanent rise in yield value was generously observed, especially with the more alkaline muds.

With mud from the same clay, but made alkaline by waterglass, it was found that, with a small quantity of alkali in the mud, the rise in yield value was much the same as with the plain mud, excepting that on cooling, the yield value tended to remain above the original figure. With a more alkaline mud the temperature effect was much less, but the result of a cycle was always to thicken the mud. With soda ash or sodium tannate as the reagent, an entirely different relationship was discovered. On heating, the yield value dropped greatly, reaching a constant value somewhere about 180° F. on cooling, a still further drop was usually found and in all cases the final yield after completion of the heating-cooling cycle was far below the original yield value.

These relationships are possibly explained partly on the basis of physical changes and partly on the basis of chemical reactions, but the phenomena are evidently much more complex than previously published work has suggested.

The significance of this is that with deep drilling high temperatures have been encountered and this heat has had a marked effect upon the characteristics of drilling fluid. To stabilize drilling mud as much as possible so that the mixture will be much the same throughout the cycle into and out of the hole is the aim of the chemist and to this end many experiments have been made.

Laying Out Central Pumping Power

What method is used in locating a central pumping power? I understand the wells are each weighed with a dynamometer to determine the load. Has any type vector analysis solution been derived in determining the location of a central power?—B. A.

There are methods devised for the plotting of central pumping powers which use vectors originating from a central point. The wells are first weighed individually and this weight converted into a measure expressed by a line drawn upon paper. The weights of the wells pumped by the central pumping power represent a system of forces which, for the purpose of determining the degree of unbalancing of the power, can be plotted as vectors originating from a central point. In analyzing a problem of this type it is best to treat both eccentrics of the power separately. The length and direction of the vectors denote the weight and direction of pull from the power of the different wells, the weight of wells being determined by a pull-rod dynamometer and the direction taken from a map.

The next step is to determine the degree of unbalancing and a force diagram is constructed. This diagram is made by laying out the individual vectors for each well in an approximate circle. When so plotted it will be possible to determine the off-balance wells and by rearranging the hook-up to the eccentric it is possible to adjust power requirements so that the wells are all practically in balance. That is, as one set of wells are on the downstroke they will be opposed by another set of wells on the upstroke. This utilizes the force generated by the descending load and at the same time helps to pump the fluid from the opposite well.

There is a short description of the method to be followed in laying out central balanced bandwheel powers on Page 253 of "Practical Petroleum Engineers' Handbook," by Joseph Zaba and W. T. Doherty. Example of force diagram of an eccentric of a pumping power is included in this description. Manufacturers of central pumping powers also have data covering the methods used in laying out units of this type and if you have a specific problem to solve you could undoubtedly receive assistance if you contact any of the central pumping power manufacturers.

Information About Nevada County, Arkansas

I desire information about Nevada County, Arkansas, oil fields. What is the depth of the pay? What formations are productive? Have any deep tests been drilled in the county?—E. A.

It is suggested you write to the Arkansas Geological Survey, Little Rock, Ark., for a copy of the general report on Nevada County included in Bulletin No. 2 issued in 1935.

This report gives a list of 75 wells drilled in that county, also reports on the Irma and Stephens fields. There is one other field in Nevada County, the Troy field opened in 1935.

The Irma field was discovered in 1921 and produces from the Nacatoch sand found at 1,150-79 feet.

The Stephens field which is partly in Columbia, Nevada and Ouachita counties was opened in 1922 and produces from the Nacatoch and Buckrange sands found at 1,500-10 feet and 2,100-10 feet respectively.

The Troy field produces from the Nacatoch and Tokio sands found at 1,243-50 feet and 2,270-80 feet respectively.

Deep Wells in United States

Can you give me a list of the deep wells drilled in this country since 1895?—J. H. G.

The following is a chronological list of deep wells. The early wells were drilled with cable tools and it will be noted that when rotary outfits were used the depth to which wells have been drilled has been steadily increasing. The list is not by any means complete but it will give the trend of deep development.

Year	Well—	Depth feet
1897	Bedell well, Pennsylvania. Cable tools	5,582
1909	Czucho well, near Breslau, Silesia, Cable tools	7,348
1917	Geary No. 770 well, Pennsylvania. Cable tools	7,248
1918	Goff well, West Virginia. Cable tools	7,386
1919	Lake well, West Virginia. Cable tools	7,579
1925	Ligonier well, Pennsylvania. Cable tools	7,756
1927	Olinda well, No. 96, California. Rotary tools	8,201
1928	University 1-B, Big Lake, Texas. Cable tools	8,523
1929	Nesa well No. 11, Long Beach, California. Rotary tools	9,280
1931	Williams well, No. 1, Semi Tropic, California. Rotary tools	9,702
	Hobson well No. 2-A, California. Rotary tools	10,030
	Jardin well No. 35, Alamo, Mexico. Cable and rotary tools	10,528
1933	Lillis-Welch well No. 1, Kettleman Hills, California. Rotary tools	10,924
1934	Berry well No. 1, Belridge, California. Rotary tools	11,377
1935	McElroy No. 103 well, Upton County, Texas. Rotary tools	12,786
1938	Continental Oil Co. K. C. L. A-2, Wasco area, California. Rotary tools	15,004

The deepest formations from which oil is being produced commercially on August 15, 1938, are in Continental Oil Co.'s K. C. L. A-2 well in Kern County, California, which was plugged back to a sand between 13,092 and 13,175 feet. This record was held only a short time when Fohs Oil Co. No. 1 Buckley-Bourg, section 77-19s-17e, in southern Terrebonne Parish, Louisiana, was completed as a producer through perforated casing at 13,254-66 feet. This hole was drilled to a depth of 13,333 feet, and the well is producing from sand of Miocene age.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Refining Crude Oil From Centralia, Illinois, Field

Would it be possible for you to furnish information about the refining of Centralia crude oil in addition to the analysis you gave in the issue of June 30, to include cracking of topped crude oil, yields, properties of the products, treating, etc.?—L. K.

The general characteristics of the Centralia oil are indicated by the analytical data shown in Table 1.

TABLE 1—ANALYSIS OF CENTRALIA, ILLINOIS, CRUDE OIL

Properties of the crude oil—	
Gravity, A.P.I.	39.2
Sulfur, per cent	0.18
Pour, °F.	—35
Viscosity at 100° F.	41
Sodium chloride, lbs. per 1,000 bbls.	1
Distillation, I.B.P., °F.	115
Per cent recovered:	
5	174
10	214
30	286
50	547
90	716
Final B.P.	718
Coke, per cent weight	3.9
At 400°, per cent	34
At 437	38
At 525	48
At 572	52.5
Loss	4.0

Separation of the fractions from the distillation of Table 1 yielded the products in the percentages and properties given in Table 2.

TABLE 2—STRAIGHTRUN PRODUCTS FROM CENTRALIA OIL

Yield by distillation—		Per cent of crude oil
Gasoline		35.0
Gravity, A.P.I.	64.7	
Sulfur, per cent	0.01	
Octane No.	56	
I.B.P., °F.	91	
10 per cent	137	
50	240	
90	340	
E.P.	383	
Heavy naphtha		2.5
Kerosene		11.8
Gravity, A.P.I.	41.7	
Sulfur, per cent	0.02	
I.B.P., °F.	396	
10 per cent	417	
50 per cent	442	
90	485	
E.P.	523	
Gas oil		16.0
Gravity, A.P.I.	34.8	
Sulfur, per cent	0.09	
Flash, P.M., °F.	275	
Pour, °F.	15	
I.B.P., °F.	516	
10 per cent	535	
50	565	
90	603	
E.P.	632	
Residue		34.7

In order to produce kerosene and furnace oil with the normal commercial specifications it is necessary to make blends to modify the primary products of Table 2 by blending. The heavy naphtha, kerosene, and gas oil were blended to produce the products reported in Table 3.

TABLE 3—FINAL PRODUCTS FROM CENTRALIA, ILLINOIS, CRUDE OIL

Product—	Gasoline	Kerosene blend	Furnace oil blend	Cracking stock blend
Volume per cent of crude oil—				
Gasoline, 385° F., e.p.	35.0	....	....	....
Heavy naphtha, 383-400° F.	....	1.4	1.1	....
Kerosene, 400-523° F., e.p.	....	6.6	3.6	1.6
Gas oil to 35° A.P.I.	....	....	3.3	12.7
Residue	....	....	....	34.7
Loss	0.0	0.0	0.0	0.0
Recovery or total yield	35.0	8.0	8.0	49.0
Volume per cent of product—				
Gasoline, 383° F., e.p.	100.0	....	....	....
Heavy naphtha, 383-400° F.	....	17.5	13.7	....
Kerosene, 400-523° F., e.p.	....	82.5	45.0	3.3
Gas oil to 35° A.P.I.	....	....	41.3	25.9
Residue	....	....	....	70.8
Total	100.0	100.0	100.0	100.0
Properties of products—				
Gravity, A.P.I.	64.7	42.7	39.4	24.5
Sp. gr. at 60° F.	0.7212	0.8123	0.8280	0.9071
Sulfur, weight, per cent	0.1	0.02	0.06	0.25
Flash, P.M., °F.	....	....	154	260
B.s.&w., per cent	....	....	0.0	Trace
Cold test, °F.	....	....	—15	50
Viscosity, at 100° F., sec.	....	33.5	....	330
Octane No.	56	....	....	....
Characterization factor	12.23	11.89	11.88	11.81
Distillation:				
I.B.P., °F.	91	377	378	500
Per cent:				
5	120	392	398	551
10	137	396	410	572
50	240	434	488	693
90	340	489	603	720
Endpoint	383	526	634	722
Over	97.0	98.5	99.0	93.5
Bottoms	1.0	1.5	1.0	....
Loss	2.0	....	....	7.2
Coke by weight:				
At 400° F.	....	....	6.0	....
At 437° F.	....	....	23.5	....
At 572° F.	....	....	82.0	10.0

The Universal Oil Products Co. developed the characterization factor for classifying any oil as to its crackability. This factor has been correlated with several of the properties of oils. From the formula

$$K = \frac{\sqrt[3]{T_B}}{S}$$

where

K = U.O.P. characterization factor.
T_B = Average boiling point, °R. = °F.
S = Specific gravity at 60° F.

Values of the characterization factor range as follows:

Pennsylvania stocks, 12.1-12.5.
Mid-Continent stocks, 11.8-12.0.
Gulf Coast stocks, 11.0-11.5.

The unused portions of the fractions not required under the scheme of Table 3 are added to the residue from the crude oil to make the cracking stock. This permits the refinery to make limited quantities of kerosene and furnace oil, as indicated in the first part of Table 4. Operating the cracking still to yield a 400° F. endpoint gasoline the overall yields are as shown in the rest of the table.

TABLE 4—ESTIMATED YIELDS, SKIMMING AND CRACKING, CENTRALIA, ILL., CRUDE OIL

Skimming yields, volume per cent of crude oil:	
Straightrun gasoline, 383° F., e.p., 56 Oct. No.	35.0
Kerosene (blended)	8.0
Furnace oil, A.S.T.M. Grade 2 (blended)	8.0
Cracking stock (blended)	49.0
Recovery	100.0
Loss	0.0
Cracking yields, volume per cent of cracking stock:	
Cracked gasoline, 400° F., e.p.	54.0
Cracked Residuum, 225 viscosity Furol at 122° F., sec.	39.0
Recovery	93.0
Loss	7.0
Gas, cu. ft./bbl.	480
Overall yields, volume per cent of crude oil:	
Straightrun gasoline	35.0
Cracked gasoline	26.4
Total gasoline	61.4
Kerosene	8.0
Furnace oil	8.0
Cracked residuum (No. 6 fuel oil)	19.1
Recovery	96.5
Loss	3.5
Gas, cu. ft./bbl.	235

The antiknock value of the cracked gasoline is 67-69 octane number.

Operating a unit for both straightrun and cracked products there are several alternative methods as indicated in Table 5.

TABLE 5—ALTERNATIVE OPERATING METHODS

Alternative operation	1	2	3
Fractionation yields, volume per cent of crude oil:			
Straightrun gasoline	37.5	37.5	37.5
Kerosene	....	11.8	....
Furnace oil (No. 2 fuel oil)	....	....	27.8
Residue	61.9	50.1	34.1
Recovery	99.4	99.4	99.4
Loss	0.6	0.6	0.6
Gravity of residue, °A.P.I.	27.3	24.5	20.1
Cracking yields, volume per cent of residue charged:			
Gasoline, 400° F., e.p.	59	54	39
Residuum, No. 6 fuel oil	32	39	55
Recovery	91	93	94
Loss	9	7	6
Gas, cu. ft./bbls.	540	480	350
Overall yields, volume per cent of crude oil:			
Straightrun gasoline	37.5	37.5	37.5
Cracked gasoline	36.5	27.0	13.3
Total gasoline	74.0	64.5	50.8
Kerosene	....	11.8	....
Furnace oil	....	....	27.8
Residuum	19.8	19.6	18.8
Recovery	93.8	95.9	97.4
Loss	6.2	4.1	2.6
Gas, cu. ft./bbl.	334	240	120

The quantity of sulfur in this oil is very low, with hardly more than a trace appearing in the gasoline and very little in the kerosene and gas oil, when compared with similar products from average crude oils. Because of this exceptional purity it does not appear that any chemical treatment for sulfur reduction will be required.

The yield of from 50 to 74 per cent gasoline, depending on the type of operation, indicates that the Centralia oil is exceptional, meeting the requirements of the refiner, a crude oil of excellent quality.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Calcium Carbonate

(Whiting and Precipitated Chalk)

Use—Treating, asphalt filler, and drilling mud.

Form—White powder.

Formula—$CaCO_3$.

Molecular weight—100.08.

Specific gravity—2.7 to 2.949.

LIMITATIONS

Mineral elements other than lime not to exceed 1 per cent.

Color, pure white.

Fineness 100 mesh, 100 per cent.

Insoluble hydrochloric acid 0.5 per cent max.

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—The twelfth and thirteenth producers, one rated at 13,429 bbls. per day and the other at 8,148 bbls. per day, were completed in the Ramsey pool, Payne County, the latter extending the pool one location northward. Three new Ramsey locations were announced. A fifth producer, near completion in the deep horizon of the Fox pool, Carter County, flowed 843 bbls. of oil in the first 14 hours.

KANSAS—Pools were opened by tests in Section 35-21-12w, Stafford County; in section 36-19-12w, Barton County, and section 11-12-16w, Ellis County, and the Hall and Letsch pools in Russell County were linked by a wildcat producer in Section 32-14-13w.

CALIFORNIA—The new Harbor City pool south of the Torrance pool was given a 1,500-foot extension by three good wells aggregating 2,250 bbls. An 1,897-bbl. well extended the Ventura Avenue field.

ILLINOIS—Wayne County has a new pool in Section 16-3s-9e, 13 miles east of the nearest production in the county. The well started at 180 bbls. per day but increased its production later. Carter Oil Co. started buying oil in Fayette County, having posted a $1.35 price. A 3,800-bbl. well was completed in Wayne County.

TEXAS—The K.M.A. pool promises to extend into Wilbarger County as a test 3 miles west of the farthest northwest completion in the field is showing favorable saturation. Ector County in West Texas continues to bring in large oil wells, last week's crop including 17 wells with a combined initial production of 21,583 bbls. In the South Alice pool in Jim Wells County a third pay sand was uncovered and a sand showing oil in quantity was opened in LaRosa field, a distillate-producing area in Refugio County. Four thousand feet east of the Fairbanks pool in Harris County a 350-bbl. well was completed in a sand other than that producing in Fairbanks, indicating it may be a separate pool.

TEX-LA-ARK—A new productive zone at 4,606-19 feet was found in the Valentine pool in Lafourche Parish, southern Louisiana. A surprise in the Cotton Valley field in North Louisiana was the discovery of salt water in the Bodcaw sand. In the Village field in Columbia County, Arkansas, an offset to two producing wells is showing salt water. Three Schuler, Union County, Arkansas, completions aggregated 2,445 bbls. in initial production.

KENTUCKY—Five oil wells were completed in the Birk City pool in Henderson and Daviess counties, but three dry holes were abandoned in the same general area. The Cunningham sand was found productive in a test in Daviess County, which had been plugged back from the McClosky horizon. The well flowed 125 bbls. a day from the Cunningham formation, which lies between the Bethel and McClosky horizons.

MICHIGAN—South of the new Overisel pool discovery well in Allegan County but in Heath Township, three wells were completed with a combined production of 2,200 bbls. per day, while a 350-bbl. well was finished in the Overisel Township side of the pool. Seven locations west and three locations south of the discovery well a dry hole was abandoned in the past week.

Completions in All Fields

(Week Ending September 3, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	41	13	5	59	2,585	3,006
Ohio	8	8	5	21	649	796
Indiana	0	0	0	0	53	64
Kentucky	12	1	7	20	585	387
Illinois	31	0	8	39	931	94
Michigan	11	0	8	19	558	535
Kansas	15	0	9	24	1,098	1,734
Oklahoma	31	0	14	45	1,187	1,891
Texas:						
North Central Texas	89	1	35	125	2,184	1,936
West Texas	45	0	5	50	1,346	1,839
Texas Panhandle	6	2	1	9	402	509
East Texas	28	0	0	28	1,366	1,555
East Central Texas	1	0	3	4	239	473
East Texas Border	0	1	0	1	101	251
Gulf Coast Texas	27	2	1	30	900	1,042
Southwest Texas	54	1	16	71	1,407	2,234
Total Texas	250	7	61	318	7,945	9,839
North Louisiana	5	3	2	10	444	435
Gulf Coast Louisiana	5	0	4	9	317	313
Total Louisiana	10	3	6	19	761	748
Arkansas	3	0	0	3	161	105
Montana	2	1	1	4	65	146
Wyoming	3	0	1	4	107	69
Colorado	0	0	0	0	6	11
New Mexico	8	0	1	9	385	506
Utah	0	0	0	0	1	2
California	24	0	3	27	900	1,030
Total United States	449	33	129	611	17,977	20,963
Total previous week	375	33	118	526		
Difference	74	0	11	85		

Outstanding Fields--Highlights

(Week Ending September 3, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	59	99	35	29,081	742	14,898
Hastings	2	6	5	2,566	580	21,229
Saxet	3	4	6	654	618	32,686
East Texas	21	37	28	1,176	25,571	440,787
Ector County	10	71	17	21,583	1,245	43,610
Winkler County	7	12	2	3,326	1,688	39,860
OKLAHOMA						
St. Louis	5	20	4	885	679	21,725
Oklahoma City	6	8	1	720	1,091	95,925
KANSAS						
Barton County	6	19	4	753	352	10,379
Stafford County	6	17	2	2,212	163	4,165
Rice County	5	17	3	514	1,196	27,343
Russell County	3	18	4	640	1,127	24,073
NEW MEXICO						
Lea County	12	78	6	574	1,835	98,921
LA-ARK-TEX						
Rodessa, La-Ark-Tex	1	12	0	0	1,023	73,225
Cotton Valley (deep)	0	17	1	360	87	10,805
Lisbon, La.	2	6	0	0	259	8,625
Schuler, Ark.	4	19	3	2,445	88	23,820
Jennings	2	15	1	531	119	25,976
MICHIGAN						
Overisel	6	14	4	2,200	20	4,900
ILLINOIS						
Central Illinois	35	266	31	6,980	885	59,900
CALIFORNIA						
Wilmington	5	24	4	1,602	549	90,500
KENTUCKY						
Birk City	5	27	5	1,250	43	3,900

Illinois and Kentucky

By STAFF CORRESPONDENT

Fairfield District, in Wayne County, Adds to Importance

MATTOON, Ill., Sept. 5.—The entrance of the Carter Oil Co. as a buyer of Illinois crude oil was a distinct advance in the march of the Central Illinois field, which in a little more than a year and a half has reached a place of importance altogether out of proportion to the quantity of oil it produces. The importance of the field thus far lies principally in its geographical position, closer to the largest consuming areas in the United States than the bigger and older fields of Kansas and Oklahoma.

The Oklahoma Pipe Line, an affiliate of the Carter Oil Co., has laid a pipe line in Fayette County to connect with the Illinois Pipe Line Co.'s trunk system and will gather and ship the Fayette County crude that Carter Oil Co. buys. This will mean a very considerable increase in the daily production of the state, as wells in the Fayette County field (in which the Louden or Beecher City field lies) have either been shut in altogether or are producing only as much as the Owensboro Corp.'s pipe line has been able to handle under its proration rules.

The largest initial producer yet brought in in the Illinois basin started off at the rate of 3,800 bbls. or more per day in the past week. It was Weinert and others No. 2 Morian, in Section 33-2s-7e, Wayne County. It produced 176 bbls. of oil the first hour from McClosky sand. Two other wells in the same pool, Texas Co. No. 1 Ray started at 1,300 bbls. a day and Weinert and others No. 2 Twist started at 900 bbls.

New Pool in Wayne

Thirteen miles east of the Aden pool in Wayne County, Iroquois Oil & Gas Co. No. 1 Phillip Walker, C NW NW NW Section 16-3s-9e, topped McClosky lime at 3,420 feet, had a showing of oil at 3,420-23 feet, a light pay streak at 3,428-32 feet and was bottomed at 3,438 feet. It swabbed and flowed 180 bbls. of oil in 24 hours. Preparations were being made to acidize the well, which opens another pool in the Fairfield area.

Other wildcats were not so successful. Trahan and others No. 1 Nicolay, SW NW NE Section 14-2n-1w, Clinton County, was abandoned at 1,795 feet. Ste. Genevieve lime was topped at 1,663 feet, Roseclaire at 1,678 feet, Fredonia at 1,719 feet, St. Louis at 1,786 feet. The McClosky section did not appear. There was some oil showing, but too much water with it.

In Clay County, Gordon and others abandoned the location for No. 1 Fitch, C W half SW SW Section 11-1n-8e.

In Marion County, Carpenter & Goldberg No. 1 Holsapple, NE NE SE Section 25-2n-1e, was abandoned as dry at 2,021 feet. It topped Glen Dean at 1,650 feet, Cypress sand at 1,869 feet and Bethel sand at 2,010 feet. They show no sign of production.

In Washington County, Salvage Oil & Fuel Co. abandoned No. 1 Reikensmyer, SE SE NW Section 11-1s-2w, total depth 1,030 feet. In the same county, E. C. Lamb No. 1 Paul, 800 feet from south and 1,020 feet from east lines NE quarter Section 29-3s-5w, was dry and abandoned at 1,517 feet.

Illinois Wildcats

Clinton County: Watkins & Wright No. 1 Wise, 75 feet from north and 600 feet from west lines SE quarter Section 24-1n-3w, shut down at 300 feet with hole full of water, waiting for pump; Farrelly and others No. 1 Berginan, NW SW NW Section 30-1n-3w, spudded; Schlafly and others No. 1 Brinkman, NE NE NW Section 31-1n-2w, St. Louis top at 1,540 feet, drilling at 1,700 feet; E. C. Phelps No. 1 H. Dodillet, SE NW SW Section 25-1n-1w, Cypress top at 1,367 feet, total depth 1,425 feet, hole full of water, fishing; Sappington and others No. 1 Hilgeman, SE NE NW Section 22-3n-3w, Cypress 1,014 feet, hole full of water, total depth 1,025 feet; M. & K. Oil Co. No. 1 Keaner, NE NW NE Section 10-3n-2w, drilling at 850 feet; Harris and others No. 1 Hage, C S half SE SE Section 18-1s-5w, machine on ground.

Marion County: Iroquois Oil Co. No. 1 Phillips, NE NE NW Section 1-1n-1e, drilling at 1,500 feet; Gray & Blalock, No. 1 Dr. Welch, E half NE NW Section 2-1n-1e, derrick; Anna Bell No. 1 Schlageter, NE SE SW Section 5-1n-1e, drilling at 1,550 feet; Thompson Drilling Co. No. 1 Wright, C NE SE NE Section 8-1n-1e, total depth 1,282 feet, moving in rotary; Hansky No. 1 Yoos, NW NE NE Section 6-1n-1e, rigging up machine; Gardenshire No. 1 Wesner, SW NE SE Section 12-1n-1e, drilling at 1,900 feet; Frontier Oil & Gas Co. No. 1 Fyke School, NW NE SW Section 17-1n-2e, location; R. E. Dalton No. 1 Ira Dalton, NW SE NE Section 19-1n-3e, Cypress top 2,253 feet, shut down at 2,300 feet; R. E. Dalton No. 1 Clifton, NE SW SW Section 15-1n-4e, Bethel top 2,650 feet, shut down at 2,682 feet; Boyce and others No. 1 Foster, C NW NW SE Section 10-2n-1e, total depth 1,340 feet, underreaming 8-inch at 1,200 feet; Oil Royalties No. 1 Suggs-Meeker, C W half NW NW Section 11-2n-1e, shut down at 1,109 feet; Jay Copps No. 1 Wesner, SW SW NW Section 24-2n-1e, rigging up machine; Shobe Engineering Corp. No. 1 Morey, SE SE Section 4-4n-1e, shut down at 200 feet for repairs; Wanner and others No. 1 Young School, NE NW SE Section 20-2n-2e, drilling at 450 feet; Wanner and others No. 1 Young Church, SW cor. SW SW NW Section 21-2n-2e, 1-acre tract, location; Sheppard and others No. 1 Greer, SW NE SW Section 30-2n-2e, Bethel at 1,912 feet, bleeding saturated streaks to 1,918 feet, set 7-inch casing at 1,906 feet; Pyramid Petroleum Co. No. 1 Roddy, SE SE SW Section 20-2n-3e, set 6-inch casing at 2,207 feet and shut down; Coyer No. 1 Mulvaney, SE NE SE Section 6-2n-4e, set 10-inch pipe at 995 feet, hole caving at 1,050 feet; Conrey & Baldwin and others No. 1 West Indian School, SW cor. NE Section 33-2n-2e, Bethel sand at 1,838 feet, running 5½-inch casing to 1,839 feet.

Clay County: Duncan Oil Co. No. 1 Ullom, C W half SW NW Section 22-2n-8e, drilling at 1,490 feet.

St. Clair County: Neil No. 1 Pfeffer, 900 feet from south and 330 feet from east lines of NE quarter Section 20-2n-6w, Weiler sand 631-32 feet, dry, total depth 690 feet, will underream.

Richland County: Lake & Allen No. 1 Hazel, C NE NW Section 22-2n-9e, derrick; Pure Oil Co. No. 1 Wakefield, W half NW NE Section 26-4n-9e, drilling at 1,964 feet.

Lawrence County: Hubst and others No. 1 Houghton, C SE SE Section 12-4n-11w, moving in material; Kesi and others No. 1 Warner, NE NE NE Section 23-4n-11w, shut down at 1,711 feet; Penn Illinois Oil Co. No. 1 Poog, NW NE SW Section 12-4n-11w, location.

Madison County: Penn Illinois Oil Co. No. 1 Poog, NW NE SW Section 12-4n-9w, location; Spivey Drilling Co. No. 1 Storms, SE SW NE Section 15-6n-8w, drilling at 1,620 feet.

Bond County: Huppard and others No. 1 Dresser, SW NE NW Section 21-6n-4w, shut down at 1,525 feet in limestone; Elmor and others No. 1 Dilman, SW SE SW Section 13-6n-2w, shut down at 420 feet for repairs.

Fayette County: Rosenthal No. 1 Washburn, near NE SE NW Section 30-6n-3e, Cypress at 1,612-48 feet, shut down; Phillips Petroleum Co. No. 8 Perryman, NE NE NW Section 3-8n-1e, set 8¼-inch casing at 80 feet; Wesley Hayes, Miller and others No. 1 Thull, SE SW SE Section 14-8n-1e, reaming; Bell Oils No. 1 R. C. Sloan, 175 feet from south and 15 feet from east lines of SW quarter Section 4-8n-3e, spudded; Whisnant and others No. 1 Zanders, SW SE NW Section 36-9n-3e, total depth 1,672 feet, plugged back to 1,578 feet and drilled out to old total depth, 1,672 feet. Bethel sand at 1,655-70 feet.

Jasper County: Kingwood Oil Co. and Bur-Kan Oil Co. No. 1 Harrison, C W half SW SW Section 2-7n-10e, derrick.

McDonough County: O. H. Hammer No. 1 Jones, C NW Section 22-7n-3w of fourth p.m., drilling at 500 feet.

Macoupin County: Spence Brothers No. 1 fee, SE SW SW Section 13-8n-9w, Devonian lime at 1,205 feet, drilling at 1,600 feet; H. W. Livingston No. 1 Lippold, near C E half NE SW Section 21-9n-8w, shut down at 570 feet.

Montgomery County: Baker & Martin No. 1 Satterlee, near NE cor. SW SW SW Section 3-8n-5w, rig burned, total depth 710 feet, shut down for repairs; Myers and others No. 1 Klekamp, SW SE Section 29-8n-5w, Mississippi lime 730 feet, shut down at 910 feet.

Cumberland County: National Consumers No. 1 Harrison-Ward, NE SE NE Section 17-9n-9e, shut down at 1,508 feet.

Effingham County: Carter Oil Co. No. 1 Tennery, SW SE SW Section 31-9n-4e, Bethel 1,637-52 feet, dry, will plug back to Weller sand at 1,558-91 feet.

Shelby County: Jolly & Ogg No. 1 Jenkins, SE cor. Section 26-10n-4e, shut down for casing at 1,000 feet; Lee Davis and others No. 1 Hopkins, SE cor. Section 32-10n-4e, spudded and shut down.

Coles County: Kingwood Oil Co. No. 1 Tomberlin SW SE SE Section 21-11n-10e, Maquoketa at 3,100 feet Drilling 3,477 feet.

Edgar County: A. M. Myers No. 1-A Brinkerhoff, 40 feet west of center SE SE Section 26-13n-13w, shut down at 860 feet for repairs; Bearcey and others No. 1 Blair, near C NW NE NW Section 24-14n-14w, shut down at 860 feet for repairs; Mabee Consolidated Corp. and others No. 1 Oakland Bank, NW NW NE Section 31-14n-14w, total depth 1,130 feet, shut down for repairs; E. Lapsley No. 1 Roll, SW SW NE Section 17-14n-13w, drilling 10-inch pipe at 80 feet, machine.

Morgan County: Waverly Oil Co. No. 1 Hubbs, near C E half E half E half Section 33-14n-8w, base of Devonian at 1,357 feet, reaming at 1,552 feet; Alexander Oil Co. No. 1 Gray, E half NW NE Section 36-15n-9w, location; Ed Duval No. 1 D. Bowen, NW NW SE Section 30-17n-12w, drilling at 550 feet.

Champaign County: Sidney Oil & Gas Co. No. 1 Wendling, 1,570 feet from south and 450 feet from east lines SE quarter Section 10-17n-10e, machine; Nedra Oil & Gas Co. No. 1 Block, SE SE NE Section 33-18n-10e, total depth 460 feet, cleaning out to drill ahead; Barber & Selver No. 1 Lindsey, C NW SE Section 20-20n-8e, total depth 130 feet, shut down.

Piatt County: Max Pray No. 1 Baker, SW NE NE Section 17-18n-6e, shut down at 2,005 feet, in shale.

Illinois Fields

HIGHLIGHTS OF THE WEEK: Carter Oil Co. posts $1.35 per barrel for Fayette County crude. The largest well in the Illinois basin is brought in in Wayne County, and is credited with a potential of at least 3,800 bbls. per day.

Daily production of new pools, 59,900 bbls.; old pools, 11,260 bbls.; total, 71,160 bbls.

Completed oil wells, 31. New operations including locations, 56. Rigs and wells drilling, 300.

Menard County: Arthur Scroggins No. 1 fee, C SW SW Section 24-19n-5w, top of sand at 1,520 feet, lime at 1,550-58 feet, with showing of oil, total depth 1,570 feet, plugged back to 1,555 feet and running 5⅞-inch casing.

Dewitt County: R. H. Smith and others No. 1 Dean Hill, SW NW NW Section 20-21n-1e, shut down for casing at 130 feet.

Southern Wildcats

Washington County: Morris No. 1 Marquard, SE NW SW Section 33-1s-5w, drilling at 900 feet; Harris and others No. 1 Hage, C S half SE SE Section 18-1s-5w, machine in; Bitterman No. 1 Bonk, C SE NE SW Section 16-3s-2w, material on ground; Thompson Drilling Co. No. 1 Musial, SE SW NW Section 19-3s-1w, Bethel sand at 1,361 feet, total depth 1,364 feet, shut down; Thompson Drilling Co. No. 1 Roznowski, SE NE NW Section 19-3s-1w, drilling at 1,450 feet, a McClosky lime test.

Wayne County: Iroquois Oil Co. No. 1 Walker, C NW NW NW Section 16-3s-9e, McClosky lime at 3,420 feet, showing of oil at 3,420-23 feet, light pay at 3,428-32 feet, total depth 3,438 feet, swabbed and flowed 180 bbls. in 24 hours, will acidize.

Jefferson County: Sam Jennings and others No. 1 Patton, NW NE SW Section 1-1s-1e, drilling at 400 feet.

Edwards County: Leach Brothers No. 1 Lee, SW NE SE Section 11-1s-10e, Cypress at 2,970 feet, drilled soft sand at 3,345-53 feet and bailed one-half barrel of oil, total depth 3,370 feet, acidized with 5,000 gallons but formation would not take the acid, will deepen.

Randolph County: Cain and others No. 1 Smiley, SE SE NE Section 31-4s-5w, shut down for repairs at 550 feet; Scholsberg and others No. 1 Hayer, SE NW SW Section 4-5s-6w, shut down at 350 feet.

Jefferson County: Sam Jennings and others No. 1 Patton, NW NE SW Section 1-1s-1e, drilling at 250 feet; Benedum-Trees, Inc., No. 1 Jeff Oil & Gas Co., C NW NE Section 16-4s-2e, waiting for casing at 316 feet; Price & Parker No. 2-A Hamilton (40 feet west of No. 2), SW SW NW Section 20-4s-3e, drilling at 1,867 feet; J. Garfield Buell No. 1 Forrest, SW SE NE Section 4-5s-1e, drilling at 2,200 feet.

Franklin County: Adams Oil & Gas Co. No. 1 Old Ben Coal Co., SW SW NE Section 19-5s-2e, Bethel at 2,613 feet, drilling at 2,665 feet.

Jackson County: T. T. Eason No. 1 Bowlin, C SE NE Section 12-7s-2w, location for a McClosky lime test; Eason Oil Co. No. 1 Bowlin, SE SE NE Section 12-7s-2w, drilling at 1,203 feet.

Franklin County: Amerada Petroleum Corp. No. 1 Ziegler, SW NE NW Section 14-7s-1e, Fredonia lime at 2,755 feet, drilling at 3,012 feet.

Saline County: Carpenter and others No. 1 Sloan, SE SE SW Section 32-7s-6e, spudded; Siegel and others No. 1 Choisser, NE NW NW Section 5-8s-7e, drilling at 720 feet.

White County: Arab Petroleum Corp. No. 1 Frank Doerner, Sr., SE SE SE Section 12-7s-8e, Ste. Genevieve limestone at 2,983 feet, Roseclaire at 2,980 feet, Schlumberger test made at 3,063 feet, awaiting orders.

Gallatin County: Bailey & Lucas No. 1 Dr. Harry Logan, SE NE NE Section 21-8s-8e, total depth 1,316 feet, pulling 10-inch casing.

Johnson County: Elzie No. 1 Bonner, C SW NE Section 30-11s-3e, 3,000-foot test, shut down at 90 feet.

Pope County: C. C. Whitlock and others No. 1 Anthis, NW NW NE Section 12-11s-3e, Fredonia at 1,630 feet, total depth 1,760 feet in limestone, fishing.

Massac County: Kahle and others No. 1 Harvick, SW corner Section 23-14s-3e, Devonian top at 1,800 feet, Silurian top at 2,495 feet, Trenton top at 2,849 feet, shut down at 3,000 feet.

Williamson County: Geological Oil Syndicate No. 1 Scott, SW SE SW Section 4-10s-2e, McClosky test, fishing for casing, total depth 1,470 feet.

New Operations

Fifty-six new operations, including rigs, drilling wells and locations were as follows:

In Marion County, Centralia field, Iroquois Oil & Gas Co. No. 1 Phillips, NE NE NW Section 1-1n-1e, is drilling at 1,500 feet; Annabel Oil Co. No. 1 Schlagater, NE SE SW Section 5-1n-1e, a wildcat, drilling at 1,550 feet; Bert Field No. 1 M and I R.R. right of way in SW SW SW Section 18-1n-1e, rigged up; Giffert Drilling Co. No. 1 Ryan, Lot 7, Block 7, in NE NW NW Section 18-1n-1e, deepening from 1,370 feet; Menhall No. 1 I. C. R.R., 1,050 feet from S and 1,500 from W lines of SW quarter Section 18-1n-1e, drilling at 1,335 feet. In Lake Centralia pool: H. H. Weinert No. 1 Foster, NW SE SE Section 7-1n-2e, location; Mammoth Producing & Refining Co. No. 2 Bachman, NW SE SW Section 9-1n-2e, drilling below 300 feet.

In Wayne County, Clsne area, Pure Oil Co. No. 2 Schuyler Fearn, C W half SW SE Section 22-1n-7e, location; Pure Oil Co. No. 4 C. B. Clay, C W half SW NE Section 27-1n-7e, location.

In Clinton County, Centralia district, Jones & Snyder No. 1, Lot 16, Block 7, Home Terrace, SE NE SE Section 12-1n-1w, rotary tools in; Broddus No. 1 Robertson, Lot 6, Block 2, Pullen Heights, SE NW NE Section 24-1n-1w, drilling below 700 feet; Iroquois Oil & Gas Co. No. 1 Bierman, Lot 15, Block 1, Finney Heights, NE NE NE Section 24-1n-1w, rotary rigged up; Iroquois Oil & Gas Co. No. 1 Turner, Lot 18, Block 5, Finney Heights, SE NE NE Section 24-1n-1w, waiting for mine cement; T. E. McArdle, No. 1 H. Bierman, Lot 16, Block 4, NW NE NE Section 24-1n-1w, drilling below 600 feet; Pace & German, No. 1 Bill Smith, Lot 8, Block 4, Pullen Heights; NE NW NE Section 24-1n-1w, drilling below 1,000 feet; Victory Oil Co. No. 1 Reinhardt, Lot 23, Block 1, Pullen Heights, NE NW NE Section 24-1n-1w, drilling below 200 feet. In the Bartelso area, Sante Fe Oil Co. No. 6 Robben, 660 feet from S and 150 from W lines SE quarter Section 5-1n-3w, rig; Newton & Ward No. 1 Trame, 200 feet from N and 510 from E lines SW quarter Section 8-1n-3w, location.

In Marion County, Lake Centralia area, Texas Co. No. 4 Conrell, NW SE SE Section 31-2n-2e, location; Texas Co. No. 1 C. Reed B, 990 feet from N and 304 from W lines SE quarter Section 31-2n-2e, location; Texas Co. No. 1 Tate B, NE SE SW Section 31-2n-2e, set 12½-inch casing at 54 feet; J. J. Broddus No. 1 McCullom, SE NW NE Section 32-2n-2e, rig up; Texas Co. No 1 F. Miller, 144 feet from N and 1,173 from E lines SE quarter Section 32-2n-2e, rotary rigged up.

In Clay County, Pure Oil Co. No. 3 Fred Hubble, C S half SE quarter Section 8-2n-8e, location.

In Clinton County, Centralia area, Adams Oil & Gas Co. No. 4 Copple, SE SW SE Section 35-2n-1w, rig; W. C. McBride Inc. No. 6 Carson, NE NE SE Section 35-2n-1w, drilling below 600 feet.

In Clay County, Clay City field, Pure Oil Co. No. 1 Wilkin Consolidated, C E half SW SE Section 29-3n-8e, set 9⅝-inch casing at 221 feet. In Richland County, Pure Oil Co. No. 2 C. D. Duff B, C N half SE SE Section 32-3n-8e, location; Pure Oil Co. No. 1 Hattie Morris and others, C E half SE SW Section 17-3n-9e, location.

In Lawrence County, Kitcher & Wilson No. 1 Arkman, CWL E half SE SE Section 19-3n-11w, machine rigged up; Ohio Oil Co. No. 19 Seeds, NE cor. NW SW Section 15-3n-12w, drilling below 900 feet.

In Marion County, Patoka area, Adams Oil & Gas Co. No. 3 Wasem, B, SW cor. NE NE SW Section 28-4n-1e, Benoist sand at 1,429 feet, coring; Adams Oil & Gas Co. No. 2 Cox, 990 feet from E and 1,020 from N lines of SE quarter Section 29-4n-1e, rig up; Adams Oil & Gas Co. No. 3 Charles Cox, NE cor. SE Section 29-4n-1e, location.

In Richland County, Pure Oil Co. No. 1 Wakefield, C W half NW NE Section 26-4n-9e, drilling at 1,964 feet; J. V. Wicklund No. 3 Sager, SW NE SE Section 22-4n-10e, location.

In Lawrence County, Herbst and others No. 1 Haugh-

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Cunningham Sand Produces in Daviess Side of Birk City

OWENSBORO, Ky., Sept. 5.—Five oil wells with a combined initial production of 1,250 bbls. and three dry holes were completed in the Birk City pool in Henderson and Daviess counties in the past week. All five producing wells were completed on the Daviess side of the pool. Eight new operations were started. In all the Western Kentucky fields the record of the week was 18 completions of which 11 were oil wells, one a gas well and seven dry holes. A 500-bbl. well in the Birk City field was the best of the week's crop.

The Fordsville Gathering Line, Inc., of Owensboro, has applied for a permit to construct a 3-inch submarine pipe line crossing in Green River. The location of the proposed work is 2.1 miles upstream from Birk City, and about 0.5 mile downstream from Hambleton's ferry. Plans of the proposed work are in the office of the District Engineer, U. S. Engineer's office, Federal Building in Louisville.

A well on the Calhoun lease, near Hambleton ferry in Daviess County, is producing at the rate of 125 bbls. of oil a day from Cunningham sand. This sand is between the Bethel and the McClosky formations. The well is the first Cunningham producer in the new field.

Following is the list of completions and new operations in Western Kentucky in the past week:

Daviess County, Birk City district: I. B. and Frank Hamilton No. 2 Birk City School Lot, estimated at 300 bbls. per day, McClosky saturation at 1,853-70 feet. R. N. Compton No. 1 L. W. Brown and others, cored McClosky and cemented casing, top of saturation 1,820 feet. Benedum-Trees, Inc., and others No. 2 Mrs. W. S. Calhoun and others, set surface pipe at 160 feet; No. 1 Calhoun reported to be good for 125 bbls. per day from Cunningham sand. Major Oil Co. No. 1 R. M. Hagan, 10 acres, dry hole, no McClosky saturation, total depth 1,900 feet, small show in Jett sand, casing was gun-perforated and the hole is full of water. Carter Oil Co. No. 2 R. M. Hagan, spudding in. J. R. Speary and others No. 1 R. M. Hagan, 52 acres, dry hole. Jess Ashby and others No. 1 Mrs. C. E. Jagoe, spudding in. Aetna Oil Service Corp. No. 1 G. M. Morrison, 80-bbl. well in McClosky pay at 1,871-78 feet, total depth 1,884 feet; No. 2 Morrison, set surface pipe. Major Oil Co. No. 1 Horace Nelson Lot, started at 250 bbls. per day from McClosky pay at 1,865-90 feet; No. 1 Dr. T. B. Sanders, estimated at 500 bbls. per day, McClosky saturation at 1,860-80 feet, total depth 1,895 feet. W. E. Hupp and Snowden & McSweeney No. 5 and No. 6 Mrs. L. Taylor, rigging up. Cane Run School district: Ellis & Ashby No. 7 Dr. Fireline, dry hole through Jett sasnd; No. 14 Myrtle Howard, 12 bbls. per day from Jett sand at 639-74 feet. Red Hill district: Pennsylvania-Indiana Oil Co. No. 18 First National Bank Tract, 10 bbls. per day from Jett sand. Oklahoma district: The Petroleum Co. No. 1 M. Westerfield, drilling at 500 feet. Snyder & Long No. 1 P. T. Westerfield, drilling at 300 feet.

Henderson County, Birk City district: Hoosier Drilling Co. No. 7 C. T. Blackwell, dry hole, no saturation, total depth 1,907 feet. W. E. Hupp and others No. 3 O. L. Boswell, moving in. Carter Oil Co. No. 3 Francis Dempewolf, spudding in; No. 2 Tom Jones, 20 acres, McClosky core showed good saturation. Niagara district: Imperial Oil & Gas Products Co. No. 1 F. Mauzey, drilling at 650 feet, McClosky test.

McLean County, South Livermore district: J. C. Ellis No. 1 Laura Porter and others, spudding in. East Livermore district: Snyder & King No. 3 John A. Rowan, rigging up. Snyder and Kentucky Natural Gas Co. No. 1 Owen Vandiver, Bethel gas showing, abandoned. Maxwell district: Ellis & Huff No. 1 R. F. Sands, 10 bbls. per day from Jett sand at 1,370-1,412 feet, total depth 1,665 feet; No. 3 Ruth Shockley and others, drilling at 90 feet. Island district: J. C. Miller, Trustee, No. 2 J. C. Shutt, dry hole.

Ohio County, Friendship Church district: Charles Marsh and others No. 5 John Bellamy, 5 bbls. per day from Jett sand. Woodward Valley Church district: Ellis & Anton No. 4 L. E. Charlet, 25 bbls. per day from Bethel sand, 1,092-1,105 feet, total depth 1,381 feet. Adaburg district: Nollem Oil & Gas Co. No. 9 Vincent Crowe, drilling at 570 feet. Leeper Oil Co. No. 6 E. Ford, drilling at 450 feet. Dr. Hardie No. 9 C. Roach, Jett sand dry, going to Barlow sand. Taffey district: Western Kentucky Petroleum Corp. No. 40 Mary Elmore, 15 bbls. per day, Jett sand 683-723 feet. Fordsville district: W. E. Hupp and others No. 2 John H. Smith, drilling at 150 feet. Elvis Dehart No. 7 John Eskridge, drilling at 200 feet. Southeast Livermore district: Cumberland Petroleum Co. No. 1 Farmers & Merchants Bank, 100-acre lease, dry hole, total depth 1,400 feet. Rosine district: W. Daley and others No. 1 W. Hatter, 1,000,000 feet of gas per day from Bethel sand, total depth 901 feet.

Hancock County, Easton district: J. C. Ellis No. 12 W. C. Smith, spudding in.

Southwest Texas District

By
F. L. SINGLETON

Jackson Trend Production Extends to Jim Hogg County

CORPUS CHRISTI, Tex., Sept. 5.—The development of Frio-Vicksburg production along the Jackson trend, which during the past few months has provided the Southwest Texas district with one of its most important wildcatting campaigns, was extended into Jim Hogg County, where Humble Oil & Refining Co. is preparing to complete No. 2 Kelsey Bass after a drill-stem test showed several hundred feet of pipe line oil in the Frio section.

Casing was being cemented following a second drill-stem test at 4,726-54 feet, total depth, which recovered 450 feet of oily mud, 1,011 feet of pipe line oil and 700 pounds of pressure. A previous test at 4,713-26 feet tested 970 feet of oil and 45 pounds of pressure in 24 minutes.

The well is located in the San Rafel grant, on a block of 30,000 acres in the southeastern part of the county. It is about 4½ miles southeast of No. 1 Kelsey Bass, a recent dry hole which also cored several promising sands. The potentiality of the Jackson trend has been enlarged by the showing of this test, as it is several miles south and on the same strike as the South Alice field in Jim Wells County, the discovery of which resulted in the present wildcatting campaign.

Third South Alice Sand

Other interesting developments along this trend, centered in Jim Wells County, where a third sand for the South Alice field was being opened and location for two important wildcats were announced. Blanco & Buchanan No. 3 Rattan, southwest extension area, L. G. Collins Farm Lots, recovered 660 feet of oil and 60 pounds of pressure on a 15-minute drill-stem test at 5,007-13 feet. The well was cored ahead to the discovery sand, logging oil sand at 5,290-5,301 feet, and casing was being cemented for completion after a drill-stem test showed pipe line oil. Two other tests were in the process of completion. Lewis Production Co. and others No. 1 Lemmonds cored oil sand at 5,291-5,306 feet and 7-inch casing was cemented at 5,314 feet. H. H. Howell No. 19 Lindsay & Reed cored oil sand, and casing was cemented on bottom at 5,295 feet.

In the Ben Bolt area Humble Oil & Refining Co. No. 1 William Adams, Marcellino Lopez Grant, was abandoned at 6,066 feet, due to mechanical trouble. This is the second well in this area and both tests cored several interesting showings. While it was being abandoned. The company made location for another wildcat, No. 1 Ben Beletz, Lot 37, of the Sholars subdivision of the Scott ranch in the W. N. Staples Survey. One and one-half miles northeast of the South Alice field, Gulfboard Oil Corp. and Mills Bennett Production Co. are starting No. 1 C. C. Forry in the LaVaca Grant.

LaRosa Looks Promising

In the recently opened LaRosa field, Refugio County, and about 6,000 feet southeast of the discovery well, I. J. Allen No. 2 Rooke showed promise of converting this distillate area into an oil pool, as a new sand showed pipe line oil. After showing as a distillate producer in the discovery horizon at 5,300 feet, the hole was cored ahead, testing distillate at 5,873-83 feet. Sand containing oil and gas was cored at 5,894-97 feet, and on a 15-minute drill-stem test at 5,893-97 feet the well indicated 445 pounds of pressure and 520 feet of 40 gravity oil. Late in the week it had cored another oil sand at 5,897-5,902 feet and a drill-stem test was being made. The 5,800-foot zone is believed to be the Tomoconnor sand, which, if true, will give this new field an excellent chance of becoming one of the lower Gulf Coast district's most important discoveries.

Along the Pettus trend in Bee County, Atlantic Refining Co. was preparing to retest No. 1 Courtney after the hole was cored deeper to 3,661-65 feet, the total depth. Sand with an odor of gas was cored at 3,661-63 feet, and sand with an odor of oil at 3,663-65 feet. On a drill-stem test at 3,642-65 feet, the well tested 5 pounds of working pressure and 135 feet of oil and wash water. Tubing was being run for completion and if the well fails to flow it will be rigged up with a pumping unit. It is northwest of Pettus and in the George Kerr Survey.

In the Fitzsimmons field, Duval County, H. J. Porter No. 1-B Fitzsimmons flowed 110 bbls. daily through a 5/32-inch choke with casing pressure 1,250 pounds and tubing pressure 480 pounds. The well is flowing from perforated casing at 4,335-45 feet, and at 4,351-55 feet. Sun Oil Co. is moving in material for No. 2 Brueggemann in the H. A. Detmer Survey 288.

Bruce Albright and others No. 1 Nueces Land & Live Stock Co., B.S.&F. Survey 119, McMullen County, opened a shallow field when it swabbed an estimated 85 bbls. of 22 gravity oil through perforated casing at 1,209-13 feet. The well did not have sufficient pressure to flow, and the casing was reperforated, but the operator was forced to shut down before another test could be made due to high water. The field is located in the southwest corner of the county, about 6 miles north of the Charamousca field.

Balcones Fault Area

Along the Balcones fault line, Millican and others were preparing to test No. 1 Willie Werner, which has shown promise of opening the first commercial production in Kendall County. The well drilled 1½ feet of limestone to a total depth of 909 feet, and after bailing failed to lower the fluid, 5½-inch casing was cemented at 907 feet. This area is known as the Sisterdale prospect, on which several shallow wells have been drilled. Some of the old wells produced oil for a short time and then went dead; for this reason it is doubtful if the present well will make a commercial producer.

In Frio County Humble Oil & Refining Co. No. 1 Schley, J. Travalder Survey 174, made a 15-minute drill-stem test in the Navarro sand at 3,520-51 feet and recovered 175 feet of mud with a slight oil odor and 180 feet of salt water. It is drilling ahead to the Edwards lime.

On the Anchorage prospect, Atascosa County, Western Gulf Production Co. abandoned No. 2 Vanegas at 2,710 feet, after it failed to produce from the serpentine, topped at 2,703 feet. Location is in the Francisco de la Garza Survey.

In the lower Rio Grande Valley district, Union Sulphur Co. continues to test the deep sand in No. 11 American Rio Grande, an outpost in the Mercedes field, Hidalgo County. The hole has been plugged back from 9,618 feet to 9,390 feet and is being tested through perforated casing at 9,347-52 feet. In the same county, and north of the Sam Fordyce field, Phillips Petroleum Co. No. 1 Flores is bottomed at 7,595 feet, and an electrical coring survey is being made. This well has cored several sands at intervals below 2,800 feet, and casing is expected to be cemented for a production test.

A recent gauge on the discovery well of the McAllen field, Hidalgo County, showed it capable of producing only 350,000 feet of gas daily and 1½ bbls. of distillate. It continues to make approximately 15 bbls. of salt water.

COMPLETED WELLS

Bexar County

Von Ormy field: Nuswald Oil & Gas Co. No. 7 Trawalter, 620 feet, 5 bbls., pumping. Robert Putnam No. 12 Wetz, perforated casing 676-710 feet, 4 bbls., pumping.

Caldwell County

Branyon field: Martel Petroleum Co. No. 3 Teas, 2,358 feet, 46 bbls., pumping. Martel Petroleum Co. No. 1-C Teas, 2,195 feet, 3 bbls., pumping. Buchanan field: Ogden & Howard No. 1-B Lynch & Ogden, 1,967 feet, 7 bbls., pumping. Luling field: Magnolia Petroleum Co. No. 22 Moore, 2,155 feet, 100 bbls. oil, 65 bbls. sulfur water, pumping. Taylor Refining Co. No. 6 Brown, 2,120 feet, 34 bbls., pumping. Salt Flat field: Luling Oil & Gas Co. No. 4 Carter, 2,555 feet, 48 bbls., pumping. Plaginos & Redding No. 2 Davis, 2,522 feet, 42 bbls., pumping.

Duval County

Benavides field: Benedum & Trees No. 17 Puig, sand 4,734-41 feet, 127 bbls., 5/32-inch choke. Casa Blanca field: Magnolia Petroleum Co. No. 7 Duval County Ranch Co., sand 1,195-1,200 feet, 84 bbls., ½-inch choke. J. R. B. Moore No. 4 Martin, sand 1,163-68 feet, 15 bbls., pumping. Fred Shields and others No. 1 Martin, perforated casing 1,160-74 feet, 15 bbls., pumping. Eagle Hill field: W. E. Butler No. 10-B Foster, sand 1,469-84 feet, 125 bbls., pumping. Fitzsimmons field: Porter Drilling Co. No. 1-B Fitzsimmons, perforated casing 4,335-55 feet, 210 bbls., ¼-inch choke. Sun Oil Co. No. 1 Brueggeman, reperforated casing 4,270-75 feet, 85 bbls., 9/64-inch choke. Hoffman field: Cox & Hamon and others No. 11 Cuellar Brothers, sand 2,803-13 feet, 168 bbls., ⅜-inch choke. Cox & Hamon and others No. 22 Cuellar Brothers, sand 2,809-36 feet, 205 bbls., ⅜-inch choke. Magnolia Petroleum Co. No. 10 Weil, sand 2,800-12 feet, 15 bbls. per hour, ½-inch choke. Seven Sisters field: Gulf Stream, Inc., No. 12-A Garza, sand 1,498-1,510 feet, 35 bbls., nine hours, jetting. Gulf Stream, Inc., No. 13-A Garza, sand 1,490½-96 feet, 75 bbls. swabbing. Seven Sisters field: Texas Co. No. 1 Meek, sand 2,660-75 feet, 4 bbls. per hour, ½-inch choke. Tesoro field: Rowan & Hope No. 1 Cuellar Brothers, perforated casing 5,073-84 feet, 115 bbls., 20 hours, 5/32-inch choke.

Guadalupe County

Darst Creek field: Dan McNear No. 1 Forshage, 2,672 feet, abandoned. Morris Oil Corp. No. 3 Anderson, 2,644 feet, 17 bbls. oil, 83 bbls. sulfur water, pumping.

Hidalgo County

Samfordyce field: Groboski & Morton No. 1-B Guerra, perforated casing 2,863-71½ feet, 200 bbls., 3/16-inch choke.

Jim Wells County

South Alice field: R. B. Bryant No. 1 Minerva Rattan, 5,335 feet, 165 bbls., ⅛-inch choke. Fidelity Oil & Royalty Co. No. 1 Lindsay & Reed, 5,541 feet, abandoned. Texas Gulf Producing Co. No. 1 Stillwell, perforated casing 5,242-52 feet, 312 bbls., 3/16-inch choke.

Medina County

Chacon Lake field: Charles Wagener No. 13-A Medina Irrigation Farms, sand 242-45 feet, 1½ bbls., pumping. Charles Wagener No. 1-C Medina Irrigation Farms, 730 feet, abandoned. Charles Wagener No. 31-A Medina Irrigation Farms, sand 315-20 feet, 1½ bbls., pumping. Charles Wagener No. 22-A Medina Irrigation Farms, sand 233-40 feet, 1½ bbls., pumping. Charles Wagener No. 20-A Medina Irrigation Farms, 203 feet, abandoned. Ina Field: Medina Production Co. No. 1-A Schmidt, 946 feet, 5 bbls., pumping. Medina Production Co. No. 5-A Wilson, 59 feet, temporarily abandoned. Medina Production Co. No. 6-A Wilson, 59 feet, temporarily abandoned.

Nueces County

Luby field: Seaboard Oil Corp. No. 14 Luby, 5,065 feet, 116 bbls., ⅛-inch choke. Seaboard Oil Co. No. 11 Shaeffer, 5,066 feet, 110 bbls., ⅛-inch choke. South Clara

(Continued on Page 96)

OFFICIAL
NOTICE

AFTER SEPT. 1, 1938 A VERY SUBSTANTIAL PRICE RAISE WILL BE EFFECTIVE.

KINDLY OBTAIN NEW QUOTATIONS ON PROPOSED SOIL-ANALYSIS SURVEYS BEFORE SUBMITTING ORDERS.

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GEOLOGICAL SCIENTIFIC SERVICE CO.

FORT WORTH

Eastern Field Report

By STAFF CORRESPONDENT

Shallow-Sand Gas Boom in Wetzel County, W. Virginia

PITTSBURGH, Pa., Sept. 3.—Nothing of importance developed in the outside deep tests during the week in the lower Eastern fields. Completions totaled 27 of which 7 were dry, 12 gas wells, and 8 producers with a daily initial production of 190 bbls. Several gas wells were completed in the shallow gas excitement in Wetzel County, West Virginia, and one large well was completed in a deeper sand in the same district. Most of the new production came from Southeast Ohio.

SOUTHEAST OHIO

The best producer for the week was a test in Licking County, Southeast Ohio, which was drilled by the Wehrle Co. as a line well between the H. M. McCracken and Edna Hickey farm in Sections 8 and 9, Hopewell Township, and located 300 feet from the south line. It was completed in the Clinton sand at 3,076 feet and flowed 120 bbls. the first day after shot.

In Trumbull County, an important deep test was dry. Norwood P. Johnston and others drilled a test on the G. M. Porter farm west of the crossroads at Mecca in Mecca Township to 4,150 feet through the Clinton sand at 4,057-4,104 feet with a hard sand void of a showing. It is being plugged.

In Ashland County, Glen Harmon and others completed a 10-bbl. natural well on the Noah Emerick Heirs farm in Section 3, Lake Township, in Berea sand at 807 feet. After a shot it increased to 25 bbls.

In Athens County, Kachelmacker Estate No. 3 New York Coal Co. tract in Section 21, Dover Township, was drilled through Berea sand to 1,076 feet and was a dry hole.

In Holmes County, Walter Cline and others on the Sylvester Close farm in Section 19, Mechanic Township, drilled through sand at 971 feet and was a dry hole.

In Licking County, C. R. Settles and others completed No. 6 P. F. Shannon, in Section 15, Mary Ann Township, in Berea sand at 762 feet. It produced 12 bbls. the first day after shot.

In Noble County, Wilbur Keith and others completed a fair well as its No. 2 L. A. Wickens in Section 14, Jackson Township, at 1,285 feet, the 800-foot and Maxton sands. It has a showing of 20 bbls. a day and 425,000 feet of gas. It was shut in.

In Perry County, Allegheny Oil Co. completed No. 30 Thomas and Mary Monahan in Section 33, Pleasant Township, in the Berea sand at 1,096 feet. It produced 2 bbls. the first day after shot.

SOUTHWEST PENNSYLVANIA

A small producer, two gas wells and a dry hole summarize the Southwest Pennsylvania field for the week. In South Strabane Township, Washington County, the Penn-Ohio Oil & Gas Co. completed the test on the W. E. Davis farm at 3,039 feet. Fifth sand was topped at 3,015 feet with 5 bbls. a day at 3,017-20 feet.

In North Strabane Township, the Keystone Drilling Co. deepened the test on the John Ross farm to 2,700 feet. Bayard sand at 2,493-95 feet yielded 40,000 feet of gas per day.

In Greene County, Equitable Gas Co. deepened No. 4013 W. L. Jacobs in Franklin Township to 3,308 feet and got 85,000 feet per day in Elizabeth sand, gas at 3,276 feet. In Center Township, this company deepened No. 2522 D. M. Thorp land to 3,291 feet through Bayard sand and it was dry.

In Washington Township, Greene County, Equitable is down 2,005 feet on the John Huffman farm. In Center Township, this company is deepening the G. M. Kuhn test at 3,509 feet and in Greene Township was drilling at 2,959 feet on the W. E. Blaker farm.

In Aleppo Township, Burleigh Wright is drilling at 2,130 feet on the William McVay farm. Here, Cochran and others have reached 2,396 feet and are shut down at No. 4 John Strope. In Greene Township, H. D. Freeland started deepening on the I. T. Moser farm with the starting depth at 1,660 feet and the Big Injun topped at 1,589 feet.

In Richhill Township, Greene County, W. L. Walter on the Ellsworth Burnsfield farm has reached 350 feet. In Monongahela Township, Fred Garrison is drilling at 2,628 feet on the Jane Stoneking farm.

Washington County

In Nottingham Township, Washington County, Beedle and Clark are rigging up on the Pittsburgh Coal Co. tract. In Fallowfield Township, Naoma Oil & Gas Co. is drilling at 1,600 feet on the James M. Williams farm with Big Injun sand topped at 1,505 feet.

In Morris Township, Union Gasoline & Oil Corp. had reached 2,065 feet in No. 816 G. L. Craft land. R. E. Hoskinson is drilling at 2,100 feet in the H. W. Ealy-C. C. Conklin test.

In Buffalo Township, R. M. Duden and others are drilling below 300 feet on the Antonius Provenzano farm. H. E. Walker and others have a rig standing on the Andrew Holmes farm in South Franklin Township.

In Plum Township, Allegheny County, Hope Construction & Refining Co. is drilling at 3,490 feet, deepening No. 4 Adam Elicker.

Deep Tests

On Chestnut Ridge in Fayette County, the L. J. Houze Convex Glass Co. has run casing to 6,682 feet in the deep test on the Paul Dunham farm in Springhill Township. It was cemented in and it will probably not resume drilling this week. The test is 54 feet in the Onondaga but the Marcellus cavings made it difficult to determine the character of the lime. In South Union Township on the same structure, New Penn Development Co. and William E. Snee have spudded on the Indian Creek Coal Co. tract, William Johnson warrant, 2 miles southwest of No. 2 Summit Hotel (Heyn) gas well. The surface elevation is 2,625 feet. Peoples Natural Gas Co. have cleared location for the rotary test on the Piedmont Coal Co. land, 1,265 feet south 50 degrees 35 minutes west of No. 2 Summit Hotel. In North Union County, on this structure, Wasson & Co. are cementing at 5,970 feet on the J. H. Sorg farm and have reached an interesting point as the Tully lime was struck in No. 1 Summit Hotel at 6,009 feet. The Sorg test will soon give evidence of the subsea slope of the structure.

In Beaver County, John T. Galey and others are hung up with a fishing job due to a line which unstranded, and are cleaning out below 4,000 feet. The test on the Eliza Allen farm in South Beaver Township had been drilling in the Onondaga.

WEST VIRGINIA

Two small wells were completed in West Virginia. In Pleasants County, Hart Oil Co. completed a 3-bbl. well on the Marion Hart Heirs farm in McKim district in Injun sand at 1,700 feet.

In Tyler County, the Rae Oil Co. completed No. 3 Ralph Brooks in Union district in the Cow Run sand at 772 feet and it is good for 3 bbls. a day.

Gas Wells

In Wetzel County, West Virginia, the Manufacturers Light & Heat Co. completed a large gas well in the test on the W. O. Kincaid and others farm in Proctor district. The Maxton sand was topped at 1,980 feet with 6,000,000 feet of gas at 1,990-2,000 feet having a rock pressure of 245 pounds.

In the shallow sands in this district which have caused a local boom and much drilling, Lloyd McIntire and others completed a fair well in the test on the C. C. Parsons tract at 1,091 feet with the Cow Run sand at 1,084 feet and a gauge of 1,666,000 feet a day at 1,084-91 feet. W. F. Burgess completed a test on the Mark Ritz tract at 542 feet with the Cow Run sand at 525 feet and 960,000 feet of gas at 528-42 feet. On the Lewis and Martha Singwald tract, this operator completed a well at 550 feet, in Cow Run sand, and it gauges 53,000 feet a day. On the Clarence Phillips tract, Dan Henthorn completed 250,000-foot gas well in Cow Run sand.

In Gilmer County, McCall Drilling Co. on the W. N. D. Snyder farm in DeKalb district shot its well with 60 quarts in Big Injun sand at 1,955-2,040 feet; gas 2,018-40 feet. It gauged 17,000 feet before the shot and 200,000 feet a day after the shot. In this district, the test by these operators on the Gainer and Ellyson farm record had gas at 1,886-88 feet, and 1,941-57 feet. It gauged 30,640 feet per day before the shot.

In Kanawha County, Pure Oil Co. completed No. 8 Slaughters Creek Coal Land Co. in Cabin Creek district in the Weir and Berea sands at 3,155 feet and has a 786,000-foot gasser.

In Mason County, Interstate Utilities Co. completed a test on the Ed and Lizzie Raybould farm in Waggoner district at 675 feet. The Coal was at 604-09 feet which had 16,000 feet of gas; Coal 675-77 feet with 40,000 feet of gas; sand 677-78 feet. It is reported larger than 56,000 feet.

In Monongalia County, the Morris Oil & Gas Co. completed the test on Pennsylvania Co. land in Grant district at 1,773 feet. The Big Injun was at 1,087-1,217 feet with gas at 1,192-1,210 and 1,212 feet; Squaw 1,291-1,342 feet with gas at 1,313-14 feet and a total gauge of 42,000 feet a day with a rock pressure of 350 pounds.

In Pleasants County, the test of the Log Cabin Oil Co. on the Thomas Triplett farm in Grant district was drilled to 1,458 feet through the Injun sand and it was dry and abandoned. In Union district, the second test of W. P. Carmichael on the Earl Wells farm was drilled to 905 feet through the Cow Run sand and it was also dry.

Oriskany Gas Field

No gas wells were completed in the Oriskany gas field in Kanawha County but one test found poor sand conditions and was dry. In Poca district, the United Fuel Gas Co. drilled No. 4788 on the I. W. Cavender farm to 5,101 feet without production. The Oriskany sand was at 4,997-5,037 feet.

In this district, the same operators have made a location for a second test, No. 4815, on the Mamie A. Ray farm. This company is down 4,837 feet in No. 4787 on the W. J. Glass lease with the Corniferous lime topped at 4,822 feet. In No. 4791 W. J. Glass the tools have reached 5,058 feet; No. 4797 T. F. Good and others, drilling at 3,790 feet; No. 4799 O. V. Milam and others at 3,455 feet; No. 4800 W. H. Odell and others at 3,493 feet; No. 4801 Floto Johnson at 3,270 feet; No. 4802 J. W. Harding and others at 2,482 feet; No. 4803 Lillie Dawson and others at 4,306 feet; No. 4804 Odell and Glass at 1,404 feet; No. 4805 Milam and Odell at 1,267 feet; No. 4806 Joseph W. Legg at 285 feet; building rig for No. 4808 J. H. Bumgardner with part of the material on the ground for No. 4796 W. J. Glass and No. 4811 S. E. Gibson.

In Poca district, the Geary-Morley Gas Co. topped Corniferous lime at 4,926 feet in the Diana J. Milam Heirs test. West Virginia Gas Corp. reached that horizon at 4,903 feet in the Spencer-Canterbury test and is drilling at 3,900 feet in the Fisher-Newhouse test. Hays Oil & Gas Co. is down 1,470 feet in the H. C. Painter test and rigging up on the F. M. Ray farm. Mullins

(Continued on Page 88)

North Louisiana, Arkansas

By
GEORGE WEBER

Salt Water in Bodcaw Sand Is Set-Back to Cotton Valley

SHREVEPORT, La., Sept. 5.—A quiet week of field development, featured by disappointments, drew attention of operators to the Cotton Valley, Village and Carterville fields in North Louisiana and Arkansas. More gas production was opened in the Jefferson sector of Marion County, Texas Rodessa. The drilling development of the newly discovered Shreveport field is getting under way following several weeks delay in establishing well spacing inside and outside the city. The deepest drilling well in the tri-state area, a wildcat in Panola County, Texas, is below 11,000 feet.

Cotton Valley

A distinct surprise to operators in the Cotton Valley field, was the discovery of salt water in the Bodcaw sand in a northwest edge test. Optimism over the future of the large gas-distillate field, for the development of a major oil reserve, had been high since the discovery of oil on the flanks of the structure several months ago.

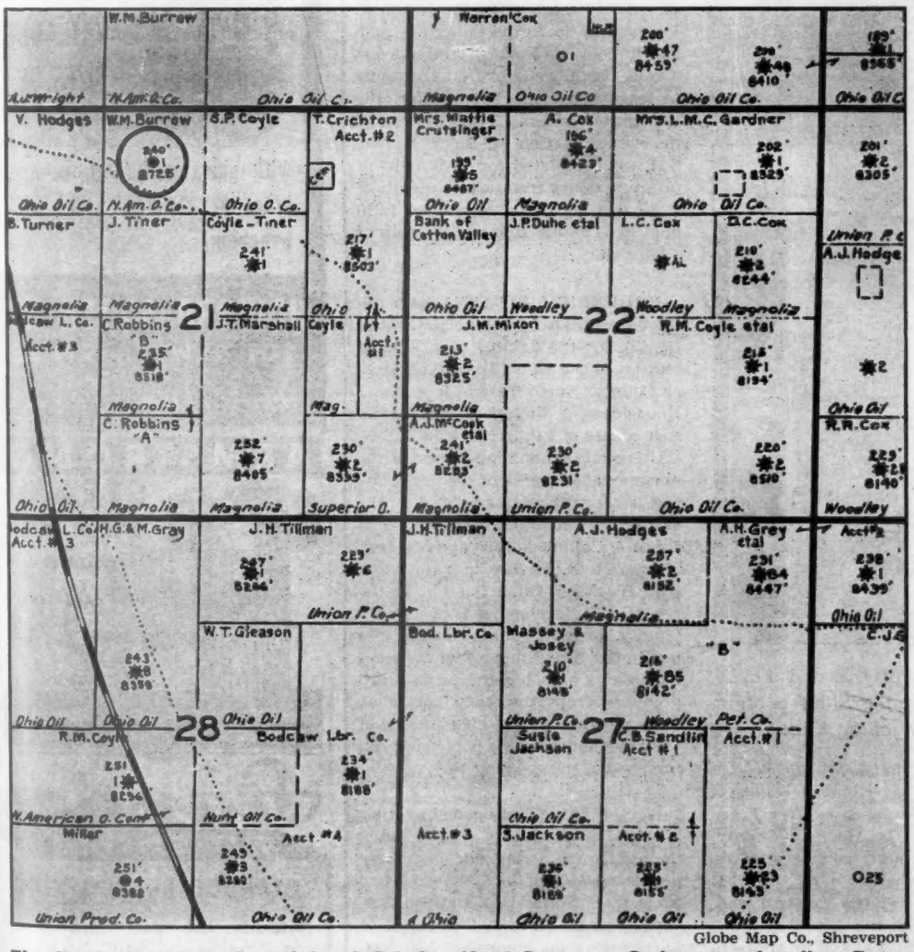
The North American Oil Consolidated Co. No. 1 Burrow, NE cor. NW Section 21-21-10, a northwest edge test, cored the Bodcaw sand showing oil. This was the second test in the field to core oil saturation in that sand, the first having been Stanolind Oil & Gas Co. No. 1 Pardee, a 1¾-mile southeast outpost. Indications were strong that the anticipated belt of oil production surrounding the large gas-distillate cap, had been proven, by the two opposite flank tests.

A string of 7-inch casing was set in the North American well at 8,665 feet, and a production test showed an estimated 30 bbls. of fluid per hour through a quarter-inch choke. The tubing pressure stood at 500 pounds and casing pressure at 900 pounds, and the flow of fluid was accompanied by a gauge of about 750,000 feet of gas daily. An important and disturbing feature of the test was that the fluid consisted of from 3 to 6 per cent salt water.

Although some observers were of the belief that the water was wash water, or that it came from a section below the Bodcaw, the majority opinion seemed to be that it was Bodcaw salt water. This development greatly reduces the expectations of large oil reserves in Cotton Valley, for the apparent width of the oil band as indicated by this test, is but about two locations wide on the northwest.

Contours of the sand in the unusually regular structure of Cotton Valley indicate that the Stanolind well on the southeast lies close to the front of water sand in the Bodcaw.

Definite proof of the existence of water so far up on the structure of Cotton Valley is not yet certain. The North American No. 1 Burrow is bottomed at 8,725 feet, the Bodcaw sand having been cored at 8,662-8,700 feet. Operators are arranging to plug back 40 feet to complete the well. Even though water is present in the sand at this point, oil production in commercial quantity may be possible at corresponding and lower points on the field flanks. It is also possible that the "D" sand, which has been proven productive in the south edge of the field, may prove oil-bearing farther out on structure than the Bodcaw, which underlies it.



Globe Map Co., Shreveport

The North American Consolidated Oil Co. No. 1 Burrow, a Bodcaw sand well in Cotton Valley, indicated by the circle, showed 3 to 5 per cent salt water upon completion tests, and a plugback job is under way. This indicates that the oil-producing band surrounding the field is much narrower than had been supposed

Carterville

Considerable interest was evinced in the deep wildcat which Magnolia Petroleum Co. is drilling in the shallow Carterville gas field of Webster Parish. No. 1-C Pardee Lumber Co., C NW NE Section 17-23-11, after coring 30 feet of saturated section in the Pettit lime of the Lower Glen Rose, topped at 5,920 feet, operators last week attempted a drill stem test which was unsuccessful.

A string of 9⅝-inch casing was set at 5,920 feet to test the formation, and to serve as a protective string for deeper drilling. This week swabbing was unsuccessful in bringing in any show, and at latest reports operators are pulling tubing to acidize the lime section for a further test.

Estimated Production

Estimated daily gross production all companies week ending September 2, 1938:

NORTH LOUISIANA

	Barrels
Bellevue	550
Caddo light	4,040
Caddo heavy	2,430
Converse	555
Cotton Valley heavy	80
Cotton Valley light	*10,805
De Soto and Red River	1,385
Elm Grove	350
Haynesville	3,310
Holly	95
Homer	2,610
Lisbon	8,625
Pleasant Hill	85
Rodessa	35,305
Sarepta-Carterville	†515
Sligo	1,405
Sugar Creek	320
Urania	2,680
Zwolle	3,200
Total	78,345

SOUTH ARKANSAS

Buckner	1,310
Champagnolle	1,050
El Dorado	1,850
Lisbon	265
Miller County	375
Nevada	635
Rodessa	6,315
Schuler	23,820
Smackover light	2,050
Smackover heavy	16,035
Stephens	560
Troy	1,200
Urbana	1,175
Village	280
Total	56,920

Texas side of Rodessa field 31,605 bbls. daily.

*3,670 bbls. is distillate.
†240 bbls. is distillate.

Village Field

Developments continued disappointing in the Village field, in Columbia County, Arkansas, where completion of a test with east and south offset production,

(Continued on Page 88)

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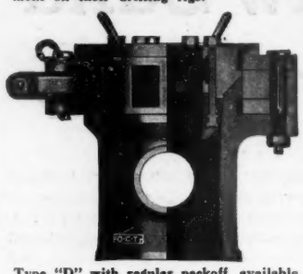

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Among the Drilling

CRESCENT DRILLING CO. of Monroe, La., is approaching the field sand in two important tests in the Magnolia field of Columbia County, Arkansas. The two wells, being drilled for Atlantic Refining Co. are located in east and west outpost locations from the discovery well of the field, and both are expected to core the sand in a few days.

JONES & JONES, contractors in the Magnolia field of Columbia County, Arkansas, are coring for the pay sand in an east outpost test drilling for Petroleum Finance Co. in Magnolia.

W. G. RAY, Shreveport, La., drilling contractor, is plugging back in No. 1 Burrows, a Cotton Valley well being drilled for the North American Oil Consolidated Co. The test, in a northwest edge location, tested oil in the Bodcaw, but also showed some salt water in the sand, and the operators have ordered a plug-back job to shut it off.

L. A. Farris of Duwe & Farris, producers and drilling contractors, Wichita, Kans.

PARKER DRILLING CO., Fort Worth, Tex., has received contracts from Texas Co. for two West Texas wildcat tests. In Hockley County, Labor 1-52, 2¼ miles northwest of the expanding Slaughter pool, No. 1-B Mallet Land & Cattle Co. will seek production from the 5,000-foot level. South of this wildcat and in Andrews County, No. 1 University has been staked by the Texas Co. in Section 4, Block 14, University Lands Survey. Operations are scheduled to commence in the next few days. Both tests will be drilled with rotary rigs the entire depth.

McQUEEN & CLEVENGER DRILLING CO., Fort Worth, Tex., has recently completed No. 118 Goldsmith for Gulf Oil Corp. in the Goldsmith pool of Ector County, West Texas, and have contracted two more tests in the area. No. 118 Goldsmith was completed for 1,802 bbls. of oil in 24 hours from a total depth of 4,205 feet. The contractors are moving in rig for No. 123 Goldsmith, while the other location has not been announced. The drilling company has been contracting wells for Gulf Oil Corp. for many years and have thus far this year completed about 12 producers in the Goldsmith field alone.

OLSON DRILLING CO. has completed two more wells for Landreth Production Co. in the Cummins-Goldsmith pool of Ector County, West Texas. Both wells are on the same lease covering the NE quarter, the SE quarter, and the E half of the SW quarter of Section 21, Block 44. No. 2-M was completed for 1,336 bbls. of oil in 24 hours from a total depth of 4,185 feet and No. 3-M gauged 1,270 bbls. in 24 hours from a total depth of 4,175 feet.

HELMERICH & PAYNE have received contract from Sinclair Prairie Oil Co. for the drilling of a wildcat outpost to the Hull-Silk pool of Archer County, North Texas. It is No. 1 Hood-Jones & Collum in the northeast corner of Lot 3, Block 18, A.T.N. C.L. Survey, about 2 miles west of the north extension area of the pool. The test is about three-quarters of a mile east of the Omohundro-Snoddy No. 1 Jones & Collum failure at 4,500 feet. Helmerich & Payne, in association with Blackwell Oil & Gas Co., in the recent oil development in Archer County, are now running casing in a test in the Hull-Silk pool which gives indications of being the pool's third producer from the 4,300-foot level. Sand showing oil was encountered at 4,362 feet and casing is now being run for a test of the showing.

W. S. WILLIS has opened another new shallow producing area in Young County, North Texas, and is drilling his second well on the discovery tract. No. 1 G. P. Stewart, D. Dawson Survey, Abstract 76, drilled 15½ feet of Larrimore sand, topped at 835 feet. The well pumped 105 bbls. of oil in 24 hours on Railroad Commission gauge. The second test for the area is drilling below 400 feet. Willis and

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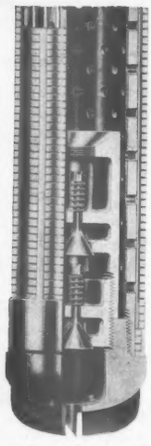

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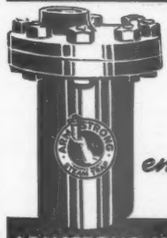

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stands the gaff and gets the job done without scoring brake rims. See page 1940, Composite Catalog.
STANDARD BRAKE LINING CO.

Contractors

associates have staked locations for five other wells as a result of the discovery's production, largest of any Larrimore sand wells completed in the county this year.

ALLEN & MORRIS, of San Antonio, provided Southwest Texas with two outstanding discoveries the past week by opening a field in Jim Hogg County, and marking an important extension and new sand discovery for the newly opened LaRosa field in Refugio County. The new strike in Jim Hogg County was made for Humble Oil & Refining Co. on the company's block of 30,000 acres in the southeast part of the county. Casing was being cemented in No. 2 Kelsey Bass following a drill stem test at 4,726-54 feet which showed 1,011 feet of pipe line oil and 700 pounds of working pressure. This is the first important strike in this particular section of the county and opens the way for a large scale wildcatting campaign along the so-called Jackson trend. In the LaRosa field, I. J. Allen No. 2 Rooke, 6,000 feet south of the discovery well, has apparently converted this distillate field into an important oil discovery, as a deep sand at 5,893-97 feet tested 445 pounds of working pressure and 520 feet of pipe line oil. At the close of the week, an additional sand section had been cored at 5,897-5,902 feet, and a drill-stem test was scheduled to be made. This is believed to be the same sand section that produces in prolific Tomoconnor field to the northeast.

HARRISON & DILLARD received contract from Stanolind Oil & Gas Co. for an interesting test to be drilled in the newly opened northeast extension area of the Fairbanks field, Harris County, Texas. The well is northeast of the company's No. 1 Look, completed last week in a new sand for an oil producer. The well is on the Schumacher lease in the J. Doswell Survey and drilling operations will be started during the week.

HARRY L. EDWARDS DRILLING CO., which has been delayed in starting drilling operations on Speed Oil Co. wildcat in Washington County, Texas, due to lack of water, got under way the past week and is drilling below 2,000 feet. The well is on the August Makowsky lease in the D. McIntyre Survey.

CRON & GRACEY have apparently found a new sand in the Clam Lake field, Jefferson County, Texas, as Shell Petroleum Corp. No. 2 McFaddin, southeast of the discovery well flowed several barrels of pipe line oil from perforations in the 3,800-foot Miocene section. Drilling was started on Moore and O'Hern No. 1 Whitehead and Rash, an outpost test in the Fairbanks field, while other drilling operations of Cron & Gracey are at Lake Long, Lockport, Dickinson, and Gibson fields for Fohs Oil Co., Louisiana Crusader Oil Co., Shell Petroleum Corp. and for themselves.

Walter J. Walsh, drilling contractor, who completed 12 wells in nine months and 10 days in the Kermit area, West Texas

SMITH & McDANNALD added a new sand to the Valentine field, Lafourche Parish, La., for Pan American Production with completion of No. 18 Harang. Completion was made in a new sand at 4,606-16 feet, the total depth. Drilling continues on eleven other operations previously reported.

JACK FRAZIER is making preparations to start an interesting 8,500-foot Wilcox test in Montgomery County. The well will be drilled on the Chase National Bank lease in the D. Garrett Survey.

TRINITY DRILLERS of San Antonio, Texas, moved one of its rigs to the active South Alice field, Jim Wells County, where No. 1 Salyers is being drilled for Lewis Production Co. Another interesting operation in the county is reported at the East Premont field, where an outpost test is being drilled for Transwestern Oil Co. Other operations are reported in Nueces and Duval counties for Carlos Oil Corp. and Continental Oil Co.

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North and East Texas

By
D. H. STORMONT

K.M.A. May Yet Extend Into Wilbarger County, On West

WICHITA FALLS, Tex., Sept. 5.—Activity in North Texas over the past week was featured by another possible extension of the K.M.A. pool into Wilbarger County. The new outpost is the Consolidated Oil Co. No. 1 G. B. Ancell, Section 35, Block 6, H.&T.C. Survey, about 3 miles northwest of the farthest west production in K.M.A., and about 1 mile into Wilbarger County. The wildcat found sandy lime, showing oil, at 3,935-46 feet, and 3,983-96 feet. Saturated sand was topped at 4,080 feet and cored to 4,096 feet. An electrical survey of the hole was made and casing set at 4,070 feet.

Also in the K.M.A. pool and indicating a 1-mile west extension, Consolidated Oil Co. No. 1 Griffin, SW NW Section 9, Block 7, H.&T.C. Survey, 1 mile west of the same company's No. 1 J. J. James, in Section 16, which previously had extended the pool a mile in that direction, topped sand showing oil at 3,972 feet and cored it to 3,984 feet. An electrical survey of the hole was made and casing cemented at 3,912 feet for a test.

Archer County

In the southern part of Archer County, Panhandle Refining Co. No. 1 Prideaux, in the A. Rohus Survey, deep test just over the line from Young County, was plugging back to test at 3,253-75 feet after completing contract depth at 4,755 feet.

Other Counties

In Clay County, L. T. Burns No. 1 M. M. Lyles, in Block 27, St. Augustine University Lands, about 10 miles south of Henrietta, was dry and abandoned in shale at 5,605 feet. An electrical survey was made and no showings were reported to have been encountered. Northeast of this test, W. H. Gant No. 1 B. Edwards, in the C. Belden Survey, was cleaning out after a shot from 5,990 feet to 6,050 feet. The test was plugged back from a total depth of 6,350 feet.

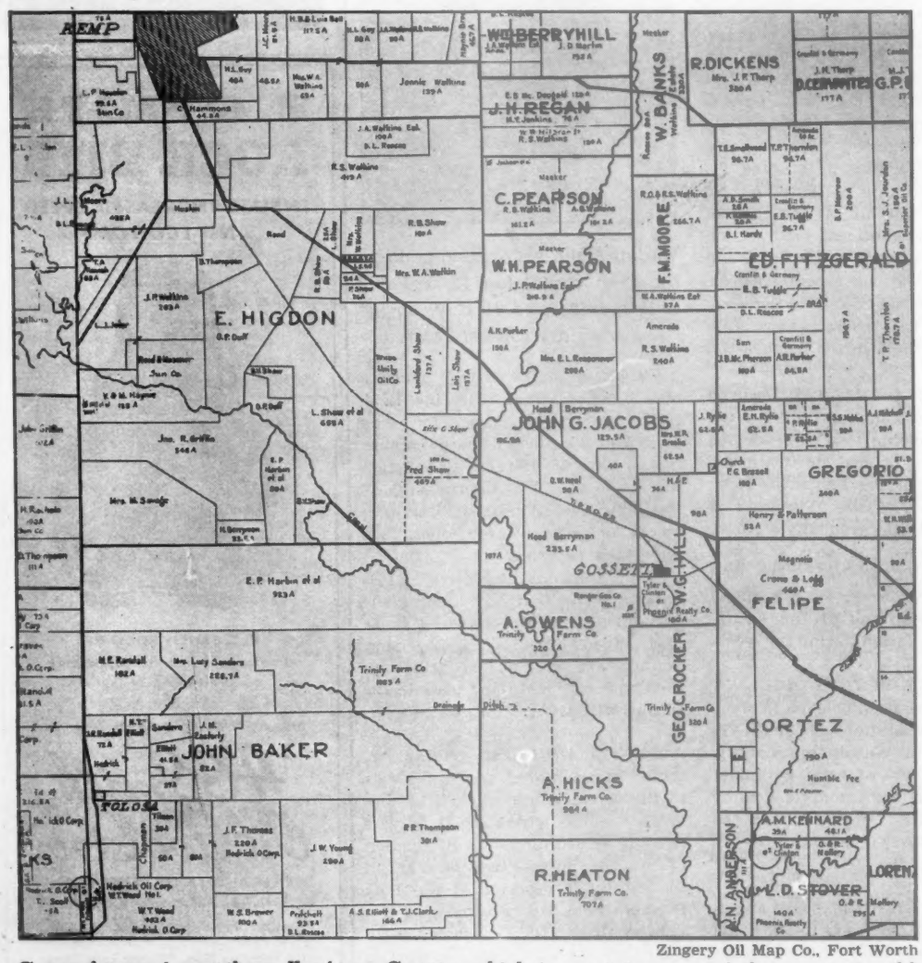
In Baylor County, Wilcox Oil & Gas Co. plan to start a 6,000-foot wildcat test to the Ellenburger, lower Ordovician, in the extreme southwest corner of the county. It will be No. 1 Fritz, in the David Barlow Survey, Abstract 10. This is the third deep wildcat to be drilled by Wilcox Oil & Gas Co. in Baylor County.

EASTERN TEXAS

DALLAS, Tex., Sept. 5.—In Kaufman County, approximately six wildcat tests, staked over the duration of the past month, are centering quite some attention as drilling or rigging up continues at all of them. Seeking to open a new Balcones Fault system field such as Flag Lake, recently discovered in Henderson County just south of the Kaufman County area, these wildcats are all seeking production from the Woodbine sands. There are a few dry holes in the area, however, the play continues with a new location being staked in the general area almost every week.

At the Flag Lake field in northwestern Henderson County, the Texas Co. is reworking its No. 1 R. L. Rarkington, W. K. Newell Survey, half-mile southwest outpost gas producer in an effort to complete it as an oil well. Estimated good for several million feet of gas per day, the well is now being allowed to clean itself and is showing about 1,200 pounds of flowing pressure. About a mile west of Athens in Henderson County, another closely watched wildcat, McElreath & Suggett No. 1 Deen, is drilling past 3,580 feet.

Two wildcat tests were abandoned as dry during the week. In Limestone County, J. A. Johnson No. 2 Speight, in the H. Varella Survey, about 8 miles south of Mexia, was abandoned at 3,701 feet. In Hill County, J. M. Russell abandoned No. 1 H. F. Holland, C. White Survey, 1 mile southeast of Abbott, at a total depth of 622 feet.



Zingery Oil Map Co., Fort Worth

General area in southern Kaufman County which is receiving one of the greatest wildcat plays of any eastern Texas area in many months

EAST CENTRAL TEXAS COMPLETIONS
(24-hour tests)

Hill County

J. M. Russell No. 1 Holland, dry and abandoned at 622 feet.

Leon County

In the Long Lake field, Bob Cirvine No. 3-A Carter, dry and abandoned at 1,305 feet.

Limestone County

J. A. Johnson No. 2 Speight, dry and abandoned at 3,701 feet.

Titus County

In the Talco field, Lucey Petroleum Co. No. 15 I. N. Williams, 4,250-99 feet, 70 bbls. in 22 hours.

EAST TEXAS FIELD COMPLETIONS
(One hour tests)

Gregg County—Longview Area

Cities Service Oil Co. No. 22 J. W. Akin, 3,529-3,644 feet, 32 bbls.; No. 19 J. Bander, 3,563-3,672 feet, 23 bbls. Humble Oil & Refining Co. No. 50 W. R. Hughes, 3,670-72 feet, 39 bbls.; No. 17 G. W. Willingham, 3,661-3,725 feet, 38 bbls. W. L. McCurdy No. 7 G. W. Richey, 3,552-62 feet, 75 bbls. Shell Petroleum Corp. No. 21 G. H. Slaton, 3,560-3,686 feet, 56 bbls.; No. 24 G. H. Slaton, 3,562-3,686 feet, 48 bbls. Stanolind Oil & Gas Co. No. A-3 T. Snoddy, 3,531-75 feet, 59 bbls.; No. B-21 Stuckey-Thrasher, 3,536-3,616 feet, 38 bbls.

Gregg County—Kilgore Area

O. D. Adams No. 6 Presbyterian Church, 3,540-49 feet, 20 bbls. Wrather and others No. 4 Hughey, 3,532-56 feet, 20 bbls. Overton Refining Co. No. 13 I.&G.N.R.R., 3,548-65 feet, 35 bbls. Shell Petroleum Corp. No. 82 J. B. Watson, 3,562-3,685 feet, 31 bbls.

Rusk County—Kilgore Area

Gulf Oil Corp. No. 12 M. R. Terrell, 3,614-16 feet, 38 bbls. Humble Oil & Refining Co. No. B-40 H.

(Continued on Page 94)

California Field Report

By
L. P. STOCKMAN

Extend Harbor City Field; Big Well in Rio Bravo Area

LOS ANGELES, Calif., Sept. 5.—The productive limits of the new Harbor City field south of the Torrance field were extended about 1,500 feet northwesterly as a result of the completion of three excellent wells. California Star Oil Co. No. 1 O'Brien flowed 760 bbls. daily; No. 1 Lermens of the same company was finished, flowing 1,050 bbls. per day and Isco Petroleum Corp. No. 1 Extension completed flowing 440 bbls. per day. No. 1 O'Brien was bottomed at 5,325 feet but was plugged back to 5,295 feet before completion due to the presence of a gray sand in the bottom of the hole. The hole was finished with a 7-inch water string landed at 5,120 feet and 206 feet of 5¾-inch liner, including 173 feet of perforated and the well was brought in flowing through a 40/64-inch bean under a tubing pressure of 170 pounds and a casing pressure of 200 pounds. No. 1 Lermens was bottomed at 5,283 feet and has a 7-inch water string landed at 5,120 feet. Isco Petroleum Corp. No. 1 Extension is making 225,000 feet of gas per day along with the oil and was completed flowing through a 24/64-inch bean under a tubing pressure of 140 pounds and a casing pressure of 150 pounds. The gas from these wells contains about 2 gallons of gasoline per 1,000 feet of gas.

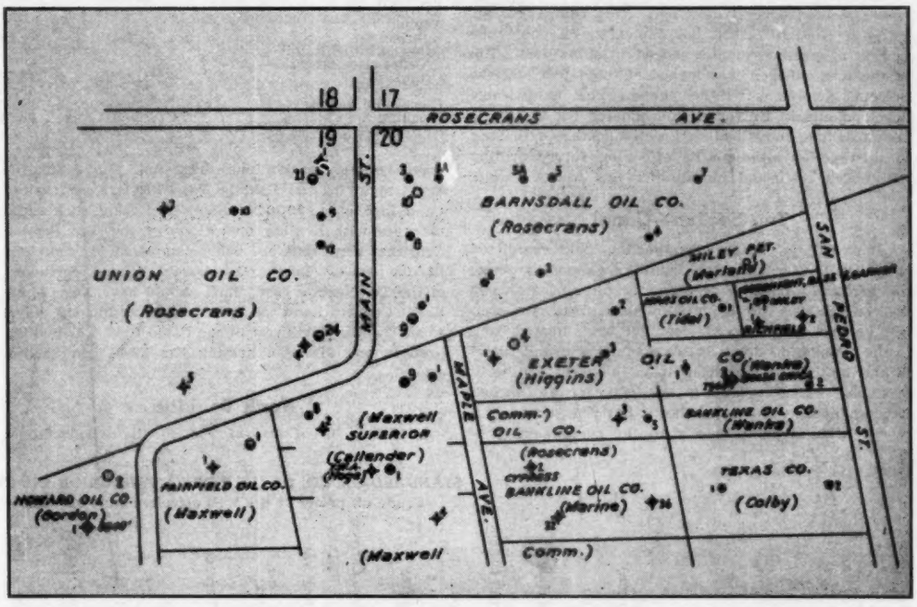
Harbor City now has four wells producing and five others either drilling or scheduled to get under way within a few days. The crude oil produced in this area tests 28.9 degrees and the production of all four producing wells is relatively clean. Standard Gasoline Co. and Inglewood Gasoline Co. have been surveying the area during the past week preparatory to laying some short gathering lines which will run to gasoline plants in the Torrance field. Operators are not convinced that this is a new productive area, and for the present production is being handled along with Torrance crude. The lithology of the two areas differs and all other indications point to the existence of separate fields. Ring Oil Co. has leased 23 acres adjoining the California Star Oil Co.'s O'Brien lease and will begin work on a well as soon as the lease comes out of escrow, which will probably be within another week. R. R. Bush Oil Co. has hit the pay in No. 1 Gimenez a few hundred feet north of California Star's new completion on the O'Brien lease and should be ready to make a production test within a few days.

Ventura Avenue

General Petroleum Corp. extended the northern limits of the Ventura Avenue field by completing No. 18 Barnard, flowing 1,897 bbls. of 28.6-gravity oil and 2,000,000 feet of natural gas per day from the deep 57 zone with bottom of the hole at 8,410 feet. This completion will result in the drilling of at least two deep wells on adjoining acreage in the immediate future. No. 18 Barnard which had to be cemented five times before the company effected a satisfactory shutoff was finished with an 8⅝-inch water string landed at 7,750 feet, and 703 feet of 5¾-inch liner, carrying perforations at 7,754-8,005 feet, 8,205-95 feet and at 8,315-8,408 feet, and 7,679 feet of 2½-inch tubing. The well was brought in flowing through a 1½-inch bean and showed a tubing pressure of 170 pounds and a casing pressure of 650 pounds. One of the projected offsets to be drilled will probably be a joint undertaking of two or more companies with the rig located on property leased by Bolsa Chica Oil Co. Deep zone exploitation involving the 57 zone is under way by the three principal operators in the Ventura Avenue field as Tide Water Associated Oil Co. and Shell Oil Co. each has several wells either in the pay or headed down to the lower zone. This is one of the hardest fields in the state to drill and generally requires three or four months to reach 8,000 feet due to hard formations. Lloyd Corp. No. 2 Dabney, a deep test on the north flank, is nearing the 4,750-foot level.

Wilmington

Only four small wells were completed in the Wilmington field of Los Angeles Basin during the current week although one, Richfield Oil Corp. No. 3 Proctor & Gamble, later built up to 741 bbls. of clean 27.8-gravity oil per day from the Terminal zone with bottom of the hole at 3,950 feet. This new well was finished with an 11¾-inch water string landed at 2,892 feet and a 5¾-inch flow string. General Petroleum Corp. No. 45 Harbor Community was only good for 100 bbls. of 15.9-gravity oil per day from the Ranger zone with bottom of the hole at 3,090 feet. Bankline Oil Co. No. 12 Union Pacific was completed, flowing 458 bbls. of comparatively clean 17.3-gravity oil daily from the Ranger zone at 2,970 feet, through a 28/64-inch bean and was finished with 412 feet of 6⅝-inch liner including 390 feet of 80-mesh landed at 2,963 feet and 2,552 feet of 2½-inch tubing. In the older section of the field, R. T. Colter completed No. 6 Harbor, flowing 303 bbls. of 14.8-gravity oil per day from 3,630 feet after finishing the hole with 965 feet of 6⅝-inch liner including 925 feet of perforated landed at 3,630 feet and 3,510 feet of 2½-inch tubing. Drilling operations have started to taper off in the Wilmington field and will probably show a gradual decline. There are enough locations, however, to keep several strings of tools in operation for several months. Aggressive development is over for the time being, as most of the operators have completed offset obligations. Development of tidelands is expected to get under way shortly, which will stimulate drilling operations later this year.



Deep zone development involving the O'Dea zone of Miocene age in the Rosecrans field has resulted in the completion of 12 excellent wells up to the present

Rio Bravo

Union Oil Co. completed its third producing well in the Rio Bravo field of Kern County. It is No. 4-34 Kern County Land in Section 34-28-25 and was finished flowing 4,140 bbls. of very clean 34.3-gravity oil and 2,850,000 feet of natural gas per day. No. 4-34 Kern County Land was bottomed at 11,510 feet and has a 7-inch water string set at 11,315 feet. Tubing pressure reached 1,850 pounds and casing pressure reached 1,950 pounds just before production of the well was cut back to 500 bbls. per day in accordance with the existing curtailment program. Union has skidded the derrick to No. 6-34 Kern County Land on the same lease and is rigging up rotary. Superior Oil Co. has suspended No. 1 Helbling at 14,030 feet and no decision has been reached as to whether any additional hole will be made. No. 1 Helbling is in the extreme southeastern end of the field, just outside of the productive limits, probably due to faulting. Union Oil Co. is still working on No. 2-34 Kern County Land and expects to have it tanking oil within a few weeks. It is the jinx well of the Rio Bravo field, having been spudded in shortly after the discovery of the field only to run into mechanical trouble following the landing and cementing of the water string at 11,200 feet. The casing collapsed and pinned the tubing so tight that the company could not make progress either in recovering the tubing or milling out the kink in the pipe. The lower part of the hole was finally abandoned and redrilling operations started from around 7,000 feet. Several fishing jobs have developed since the original trouble started, two occurring within the past 15 days, but full recovery has been made. The bit in this well is at present rotating ahead at 9,930 feet with completion depth placed at about 11,350 feet which means that the crews must drill another 1,400 feet before finishing the well.

Torrance

Four completions marked development work in the Torrance field and a much larger group should be finished during this week. Standard Oil Co. headed

the list with a well good for 980 bbls. of 26.5-gravity oil per day. This new producer was No. 1-12 Marble finished at 4,988 feet with 276 feet of 5¾-inch liner including 236 feet of perforated and 4,895 feet of 2½-inch tubing. Packard Oil Co. No. 6 Lomita was completed, flowing 449 bbls. of clean 26.9-gravity oil per day through a 40/64-inch bean from 4,960 feet. This well was finished with 162 feet of 5-inch liner including 138 feet of 125-mesh perforations landed on bottom and a 6⅝-inch water string cemented at 4,823 feet. No. 4 Lomita of Sonwell Oil Co. was completed flowing 91 bbls. of 26.8-gravity oil through a 16/64-inch bean from 4,955 feet. This well was finished with 167 feet of 5½-inch liner including 137 feet of 125-mesh perforations landed on bottom. Caldale Oil Co. No. 1 Lomita was good for 270 bbls. of 27.8-gravity oil daily from 4,980 feet after the hole had been finished with 189 feet of 5¾-inch liner including 150 feet of 125-mesh perforations landed at 4,958 feet and 4,925 feet of 2½-inch tubing.

East Coalinga

Petroleum Securities Co. should complete a second well in the Guijarral Hills section of the East Coalinga field within a few days and should have another additional well tanking oil within two weeks. This area is causing operators considerable worry at present due to lack of conformity in subsurface conditions. Universal Consolidated Oil Co. failed to log the Avenal zone in No. 1 Leavitt-Hintze which looked like an almost sure shot a few weeks ago. This well is northwest of the discovery well and while some streaks of oil sand have been found no body of any thickness has been uncovered. The bit is going ahead at 7,120 feet. The transition zone was logged at 6,276-6,300 feet and top of the Kreyenhagen at 5,280 feet. Petroleum Securities Co.'s next producer should be No. 88-12-C Grimes in Section 12-20-15 as the water string was cemented several days ago. This company's No. 7-7-F in Section 7-20-16 has found the Avenal zone and is at present drilling ahead at 6,748 feet. Top of the Kreyenhagen was logged at 5,538 feet and the present zone looks rather good. The unfavorable developments in Universal Consolidated Oil Co. No. 1 Leavitt-Hintze may lead to greatly decreased drilling in this section although its effect on future drilling will not be reflected for another few weeks.

Ten Section—Canal

Shell Oil Co. in the Ten Section field completed No. 72-31-B Kern County Land in Section 31-30-26, flowing 2,470 bbls. of 29.3-gravity oil and 2,400,000 feet of gas per day from 8,200 feet. This new well was carried down to 8,374 feet but was plugged back to the completion depth because of a gray sand found in the bottom of the hole. It is the most southerly producing well completed in the field. It was finished flowing through two 1-inch beans but was subsequently cut back in conformity with the curtailment program. Shell has two more rigs up. The company's latest spud in this field is No. 47-20-B Kern County Land in Section 20-30-26. Shell is making such rapid progress with drilling operations in the Ten Section field that new wells are being completed in from four to five weeks. In the Canal field located northwest of the Ten Section field, Shell should have No. 45-14-A Kern County Land on production within 10 days. About 2 miles northwest of the Canal field it is making preparations to begin drilling No. 87-4-13 in Section 4-30-25.

North Belridge

Richfield Oil Corp. in the North Belridge field completed No. 2 in Section 22-27-20, flowing 1,290 bbls. of 32.9-gravity oil and 2,925,000 feet of gas per day from the Wagonwheel zone at 8,375 feet. This well which was brought in flowing two 1½-inch beans on open hole has since been reduced to 350 bbls. per day by flowing the well through the tubing. It is flowing through a 12/64-inch bean and shows a tubing pressure of 1,790 pounds and a casing pressure of 2,100 pounds. Top of the Wagonwheel zone was logged at 8,250 feet and the hole was acidized. No. 4 Martin of the Texas Co. bottomed at 8,430 feet on a formation test with the zone at 8,266-8,430 feet openflowed at the rate of 1,296 bbls. of clean oil per day.

(Continued on Page 92)

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	August 26 Total this week	August 26 Daily average	August 19 Total last week	August 19 Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	158,996	22,714	633,300	60 038
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	190,166	27,167	153,148	21,878	2,388,144	2,711,389
Kerosene	.....	.....	57,552	8,222	257,005	328,907
Foreign exports—						
Crude oil	520,998	74,428	641,837	91,691	15,989,442	9,477,468
Fuel oil	167,013	23,859	218,160	31,166	5,951,659	9,387,116
Diesel and gas oil	232,098	33,157	250,094	35,728	4,263,113	5,077,863
Gasoline	763,572	109,082	249,711	35,673	5,645,172	5,342,280
Kerosene	20,454	2,922	7,495	1,071	687,555	1,589,462
Lubricants	.....	.....	54,757	7,822	103,127	.....
Other unfinished oil	.....	.....	.....	.....	.....	849,163
Coastwise-domestic—						
Crude oil	312,032	44,576	441,291	63,042	8,171,885	3,083,251
Fuel oil	301,148	43,021	186,327	26,618	7,092,419	9,963,759
Diesel and gas oil	18,941	2,706	37,548	5,364	1,048,628	1,378,323
Gasoline	77,573	11,082	287,859	41,123	10,070,482	10,097,528
Kerosene	.....	.....	5,774	825	155,086	272,401

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	15,910	2,273	.....	.....	25,409	25,778
Kerosene	16,124	2,303	.....	.....	16,124	.....
Asphalt	.....	.....	.....	.....	418,700	278,026
Lubricants	.....	.....	.....	.....	16,905	22,472
Foreign exports—						
Crude oil	193,009	27,573	217,255	31,036	3,873,909	1,957,468
Fuel oil	145,559	20,794	88,149	12,593	1,615,961	1,516,913
Diesel and gas oil	37,892	5,413	182,451	26,064	1,967,828	2,224,368
Gasoline	132,718	18,960	106,816	15,259	3,964,739	3,632,308
Kerosene	.....	.....	.....	.....	478,292	683,076
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	4,449	636	10,174	1,453	348,861	425,740
Coastwise-domestic—						
Fuel oil	77,214	11,031	101,214	14,459	3,995,156	4,261,545
Diesel and gas oil	11,497	1,642	48,197	6,900	951,125	735,725
Gasoline	192,368	27,481	102,988	14,713	4,996,593	3,190,053
Kerosene	.....	.....	.....	.....	320,083	188,822

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	158,996	22,714	633,300	60,038
Diesel and gas oil	.....	.....	.....	.....	178,662	329,658
Gasoline	206,076	29,439	153,148	21,878	2,413,553	2,737,167
Kerosene	16,124	2,303	57,552	8,222	273,129	328,907
Asphalt	.....	.....	.....	.....	418,700	278,026
Lubricants	.....	.....	.....	.....	16,905	22,472
Foreign exports—						
Crude oil	714,007	102,001	859,092	122,727	19,863,351	11,434,936
Fuel oil	312,572	44,653	306,309	43,758	7,567,620	10,904,029
Diesel and gas oil	269,990	38,570	432,545	61,792	6,230,941	7,302,231
Gasoline	896,290	128,041	356,527	50,392	9,339,911	8,974,588
Kerosene	20,454	2,922	7,495	1,071	1,165,847	2,272,538
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	4,449	636	64,931	9,276	451,988	425,740
Other unfinished oil	.....	.....	.....	.....	.....	849,163
Coastwise-domestic—						
Crude oil	312,032	44,576	441,291	63,041	8,171,885	3,083,251
Fuel oil	378,362	54,052	287,541	41,077	11,087,575	14,225,304
Diesel and gas oil	30,438	4,348	85,745	12,249	1,999,753	2,114,048
Gasoline	269,941	38,563	390,847	55,835	15,067,075	13,287,581
Kerosene	.....	.....	5,774	825	475,169	461,223

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Monebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.78	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.96	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	$1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Rocky Mountain Area

By T. R. INGRAM

Two Tests in Carbon County, Wyoming; Osage Is Extended

DENVER, Colo., Sept. 5.—The Continental Oil Co.'s test on Cottonwood, eastern Colorado, is at critical stage and will run casing before deepening into the Mississippian, topped at 5,050 feet.

An extension of the Osage field in Wyoming half a mile to the southwest is expected in George Keisling's test, which is showing for a producer. The Des Moines-Osage Oil Co. No. 15 made 10 bbls. per day before shot. C. D. Cunningham and associates made locations for two important wildcats in Carbon County. The California Exploration Co.'s discovery well on the Waugh dome, Hot Springs County, was abandoned when drilled deeper to test the Tensleep. The Stanolind Oil & Gas Co. No. 26 Wyoming Associated, a Tensleep well in Salt Creek, is flowing 168 bbls. per day, 42 per cent water.

Montana had three completions and one new operation. A. R. Pardue No. 1 Tribal-171, in Cut Bank, swabbed 180 bbls. initially. The Lion Oil Producing Co. No. 4 Haugen, in Kevin-Sunburst, is pumping 40 bbls. The General Oils, Ltd., No. 1 State, West Kevin, was dry and abandoned. The Montana Gas Co. No. 2 Clark, Bow and Arrow dome, gauged 18,000,000 feet.

NEW MEXICO

The southeast extension of the Vacuum pool, Lea County, southeastern New Mexico, was proven with completion the past week of Phillips Petroleum Co. No. 7 Santa Fe, C SE SW Section 27-17-35. It topped pay at 4,380 feet, total depth 4,610 feet in lime, and had natural flow of 208 bbls. of oil through tubing in five hours, with 568,000 feet of gas. This extends the pool 1 mile southeast.

Other Lea County completions of the week were:

Magnolia Petroleum Co. No. 1-L State, C SE SW Section 21-17-35, Vacuum district, flowed 100 bbls. of oil naturally in 13 hours from pay topped at 4,497 feet, total depth 4,660 feet.

Carr Drilling & Exploration Co. No. 1 State, C SW SW Section 22-17-35, found pay at 4,520 feet, total depth 4,634 feet, and had initial flow of 139 bbls. of oil in six hours through tubing.

Maljamar Oil & Gas Co. No. 5 William Mitchell, C NW NW Section 19-17-32, found pay at 4,015 feet, was bottomed at 4,033 feet, plugged back to 4,030 feet and pumped 20 bbls. of oil daily.

G. T. McLaughlin No. 1 Polhamus, SW NW NE Section 9-24-37, Mattix area, pumped 10 bbls. of oil daily from pay topped at 3,503 feet, total depth 3,673 feet.

Weiner and associates No. 1 Parcell, C S half SW NE Section 5-23-38, was dry and abandoned at 4,500 feet, total depth.

Penrose & Rowan No. 1 Christmas, SE cor. Section 28-22-37, Penrose pool, entered pay at 3,556 feet, was bottomed at 3,690 feet in lime and shale, and flowed 97 bbls. of oil daily, initially.

Two wells in Eddy County were completed, as follows:

Neil H. Wills No. 2 Stovall-Wood, SE SE NW Section 20-20-30, Wills pool, had pay at 1,413 feet, was bottomed at 1,415 feet, and was completed for estimated pumping potential of 75 bbls. of oil daily.

H. A. Hartwell No. 1 Vandagriff, NE NE SE Section 8-18-27, topped pay at 1,925 feet, total depth 2,085 feet, and pumped 9 bbls. of oil and 1 bbl. of water daily.

Lea County

Addison Oil Co. No. 3 Knight, S NE NW Sec. 27-24-37. Drlg. 3,430 ft.

Anderson & Prichard No. 3 Carlson-Harrison, SE NW SE Sec. 22-25-37. Drlg. 3,048 ft.

Anderson & Prichard No. 2 Stuart, SW SW NW Sec. 11-25-37. Drlg. 2,962 ft.

Anderson & Prichard No. 3 Wells, C NE NW Sec. 5-25-37. Rng. csg. 3,380 ft.

Continental Oil Co. No. 2 Britt B-15, C W½ SW NW Sec. 25-20-37. T.D. 3,913 ft.; F. 20 B.O.P.H. through csg.

Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec. 6-21-37. Loc.

Continental Oil Co. No. 1-B-1 Lockhart, C SW NW Sec. 1-22-36. W.O.C. 280 ft.

Continental Oil Co. No. 1 Myer B-31, C NW SW Sec. 31-20-38. W.O.C. 3,510 ft.

Continental Oil Co. et al No. 1 State G-36, C NW SW Sec. 36-17-35. Loc.

Continental Oil Co. No. 1 State I-7, NE NW NE Sec. 7-17-34. Drlg. 4,635 ft.

Continental Oil Co. No. 2-J-2 State, C NE SE Sec. 2-22-36. Drlg. plug 285 ft.

Continental Oil Co. No. 1 State A-36, C SE SE Sec. 36-20-37. Drlg. 3,525 ft.

M. J. Delaney Drlg. Co. No. 1 State, C SE NW Sec. 30-17-35. Loc.

Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. Drlg. 2,626 ft.

Emperor Oil Co. No. 1 Humble-State, C SE SW Sec. 36-20-35. R.U.S.T.

Getty Oil Co. No. 3-F State, C NW NW Sec. 36-17-34. T.D. 4,100 ft.; bailing.

Great Western Prod. Co. No. 1 Leonard, C SE NE Sec. 32-23-37. Drlg. 3,492 ft.

Gulf Oil Corp. No. 1 Alley, C NE SE Sec. 10-23-37. T.D. 3,713 ft.; S.I.

Gulf Oil Corp. No. 4 Day, SE SW NW Sec. 6-22-36. Cmtg. at 3,780 ft.; T.D.

Gulf Oil Corp. No. 2-E Mattern, C NE SW Sec. 1-22-36. Drlg. 2,913 ft.

Gulf Oil Corp. No. 6 McCormack, C NW SE Sec. 32-21-37. Drk.

Helmerich & Payne and Continental Oil Co. No. 1-G-36 State, C NW SW Sec. 36-17-35. Drlg. 4,160 ft.

Humble O. & R. Co. No. 6 Fopeano, C NE NE Sec. 35-20-36. T.D. 3,850 ft.; treated: S.O.

Humble O. & R. No. 1-J State, C SW SW Sec. 19-17-35.Drk.

Magnolia Pet. Co. No. 2 Corrigan, C SE SE Sec. 33-21-37. Drlg. 3,735 ft.

Magnolia Pet. Co. No. 13 State-Bridges, C SW NW Sec. 25-17-34. T.D. 4,654 ft.

Magnolia Pet. Co. No. 14 State-Bridges, C SW NE Sec. 25-17-34. T.D. 4,720 ft.; to shoot.

Magnolia Pet. Co. No. 15 State-Bridges, C SW SE Sec. 26-17-34. Drlg. 4,130 ft.

Maljamar O. & G. Co. No. 10 Baish, C SW NW Sec. 22-17-32. T.D. 4,110 ft.; bailing est. 10 B.O.P.D.

Maljamar O. & G. Co. No. 11 Baish, C NW NW Sec. 22-17-32. T.D. 3,847 ft.; drlg. plug.

Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. Drlg. 3,640 ft.

Jas. A. Mascho No. 2 Cloyd, C SW SW Sec. 20-22-33. Drlg. 4,585 ft.

John Menke No. 1 Alexander, C NW NW Sec. 5-21-37. T.D. 3,625 ft.; R.U.S.T.

Ohio Oil Co. No. 1 State-Warn, C NW NW Sec. 6-18-35. Drlg. 2,990 ft.

Ohio Oil Co. No. 1 State-Bridges, C NE NE Sec. 20-17-34. Drlg. 3,625 ft.

Ohio Oil Co. No. 1 Walden, C NE NE Sec. 21-22-37. O.W.D.D. O.T.D. 3,636 ft.; to deepen.

Ohio Oil Co. No. 1 Wills, C NE NW Sec. 35-26-37. Loc.

Olean Pet. Co. No. 1 Boyd, C NW SW Sec. 23-22-37. Drlg. 2,930 ft.

Olean Pet. Co. No. 1 Ferrell, C NE SE Sec. 22-22-37. Drlg. 2,632 ft.

Parker Drlg. Co. No. 1-A State, C SW SW Sec. 21-22-37. Drlg. 2,785 ft.

Lem Peters No. 1 Coll, NW SW SW Sec. 26-22-37. Drlg. 3,360 ft.

Lem Peters No. 4 L. J. May, SW SE NE Sec. 27-22-37. Drlg. 1,080 ft.

Lem Peters No. 2 T. O. May, NW NE NE Sec. 34-22-37. T.D. 1,145 ft.; S.D.O.

Phillips Pet. Co. No. 3 Santa Fe, C SW NW Sec. 5-18-35. W.O.C. 1,527 ft.

Phillips Pet. Co. No. 9 Santa Fe, C SE SE Sec. 21-17-35. T.D. 4,645 ft.; T. pay 4,535 ft.

Phillips & Pure No. 3 Woolworth, C E½ SE SE Sec. 33-24-37. T.D. 315 ft.

Repollo Oil Co. No. 2 Hair, NW SW NW Sec. 9-24-37. T.D. 3,560 ft.; tstg.

Repollo Oil Co. No. 2 Turner, SW NE SW Sec. 29-21-37. T.D. 3,803 ft.; F. by heads est. 100 B.O.P.D.

Shell Pet. Corp. No. 1-B State, C SE SE Sec. 30-17-35. Drlg. 4,318 ft.

Shell Pet. Corp. No. 1-E State, C SE SW Sec. 31-17-35. Drlg. 3,115 ft.

Shell Pet. Corp. No. 1-F State, C SW SW Sec. 29-17-35. Loc.

Shell Pet. Corp. No. 1-G State, C SE SE Sec. 22-17-34. T.D. 4,765 ft.; S.O.

Shell Pet. Corp. No. 1-H State, C NW SW Sec. 29-17-35. Loc.

Shell Pet. Corp. No. 4-H State, W½ NE SE Sec. 13-21-35. Drlg. 3,178 ft.

Shell Pet. Corp. No. 1 Swigart, C NE SE Sec. 25-17-34. Drlg. 4,268 ft.

Skelly Oil Co. No. 1 Baker, C SW SW Sec. 10-22-37. C.&P.

Skelly Oil Co. No. 6 Baker, C SW NE Sec. 27-22-37. Drlg. 2,658 ft.

Skelly Oil Co. No. 1 J. V. Baker, C SE SW Sec. 22-22-37. O.W.D.D.; T.D. 3,695 ft.; F. est. 64 B.O.P.D. while C.O.

Skelly Oil Co. No. 1-B King, C NE SW Sec. 33-22-37. Drlg. 445 ft.

Skelly Oil Co. No. 1-M State, C SW SW Sec. 32-24-37. Drlg. 3,116 ft.

Stanolind O. & G. Co. No. 4-B Langlie, C NW SW Sec. 14-25-37. T.D. 3,418 ft.; shot and F. est. 75 B.O.P.D.

Stanolind O. & G. Co. No. 5-B Langlie, C SE SE Sec. 9-25-37. Drlg. 3,123 ft.

Stanolind O. & G. Co. No. 8 Terry, C NW SE Sec. 9-19-38. O.W.D.D.: O.T.D. 4,186 ft.

Standard Oil Co. of Texas No. 1 State, C SW NW Sec. 32-17-35. T.D. 4,705 ft.; P.B. 4,649 ft.; F. 38 B.O. in 4 hrs.; tstg.

Sou. Pet. Explo. Co. No. 4 Downes, C NW SW Sec. 32-21-37. Drlg. 2,950 ft.

Texas Co. No. 3 Black, C NW NE Sec. 21-24-37. T.D. 3,600 ft.; P.B. 3,495 ft.; C.O. on bttm.

Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. C.&P.

Texas Co. No. 5 Fristoe, NW SE SE Sec. 3-25-37. Drlg. 1,795 ft.

Texas Co. No. 2 Fanning, C NW NE Sec. 4-26-37. Drlg. 2,075 ft.

Texas Co. No. 15 Lieu Lands, C SW NE Sec. 20-20-37. Drlg. 2,607 ft.

Texas Co. No. 1-N State, C SW SW Sec. 30-17-35. T.D. 4,850 ft.; drlg. out cement to 4,689 ft.

Texas Co. No. 3-Q State, C NW SE Sec. 25-17-34. Drlg. 4,180 ft.

Texas Co. No. 1-S State, C NW SW Sec. 35-17-34. Drlg. 3,440 ft.

Tide Water Asso. Oil Co. No. 1-L State, C NE NW Sec. 23-12-36. Drlg. 5,110 ft.

Twin Oil Co. No. 1 Hare, C SE SW Sec. 33-21-37. T.D. 1,203 ft.; set 8⅝-in. csg.

Twin Oil Co. No. 1 Joyce-Pruitt, C SE SE Sec. 31-21-37. T.D. 3,771 ft.; C.O.

Twin Oil Co. No. 2 Corrigan, C NE NE Sec. 4-22-37. T.D. 3,566 ft.; W.O.C.

Carr Drlg. & Expltn. Co. No. 1 State, C SW SW Sec. 22-17-35. Drlg. 4,367 ft.

Two States Oil Co. No. 3-B Cole, C SE NE Sec. 16-22-37. Drk.

Two States Oil Co. and Kaseman No. 2-A Hill, C SE SW Sec. 31-20-38. Drlg. 2,185 ft.

Weier Drlg. Co. et al No. 1 Woolworth, NE NE SW Sec. 28-24-37. T.D. 3,565 ft.; shot & F. 24 B.O.P.H.

Weiner et al No. 2 Smith, NW SE NE Sec. 4-25-37. Drlg. 2,010 ft.

Eddy County

Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. Loc.

F. E. Baker No. 1 Eddy, NE Sec. 12-22-27. T.D. 2,510 ft.; rng: csg.

Carper Drlg. Co. No. 1 Day, NE NE NE Sec. 3-19-21.

Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. Drlg. 350 ft.

D. & B. Oil Co. No. 3-A Jenkins, SW SW NW Sec. 21-17-30. Loc.

D. & B. Oil Co. 3-A Berry, NW SW NW Sec. 21-17-30. Drlg. 2,130 ft.; S.G.

Dominion O. & G. Co. No. 2 Johnson, C SE NE Sec. 35-16-31. Drlg. 3,599 ft.

Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. W.O.C. 1,280 ft.

English & Harmon No. 1 Dougherty, NE NE SW Sec. 3-17-27. Drlg. 2,025 ft.; S.G.

Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. T.D. 498 ft.; set 8¼-in. csg.

Franklin Pet. Corp. No. 1 McIntyre, NW NE SE Sec. 20-17-30. Drlg. 2,523 ft.

Fullerton Oil Co. No. 1-A Johnson, C SE NW Sec. 35-16-31. T.D. 3,871 ft.; shot & C.O.

Fullerton Oil Co. No. 1-A Little, C NE NE Sec. 28-18-31. Drlg. 2,430 ft.

C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,400 ft.; S.D. for fuel.

F. G. Keys No. 2 State, C SE NE Sec. 9-17-28. Drlg. 1,625 ft.

Harry Leonard No. 1 Texas, NW NW NE Sec. 36-16-31. Drlg. 3,943 ft.; swbg. 30 B.O.P.D.

Martin-Yates No. 1 Bowers, SW SE SE Sec. 31-19-27. R.U. machine.

Peyton Bros. No. 2 Ginsberg, C SE SE Sec. 8-18-31. T.D. 3,185 ft.; flwd. 38 B.O.P.D.; S.I.

Peyton Bros. No. 1 Erwin, C SW SW Sec. 9-18-31. Loc.

Premier Pet. Co. No. 1 Maddren-Beeson, NE SW SE Sec. 28-17-30. Drlg. 1,640 ft.

Repollo Oil Co. No. 3 Beeson, SE NE SE Sec. 28-17-30. Drlg. 2,880 ft.

Western Drlg. Co. No. 2-A Western, SE SE NW Sec. 23-17-29. Drlg. 2,983 ft.

Neil H. Wills No. 2 Colglazier, SW SW NE Sec. 20-20-30. Drlg. plug at 430 ft.

Yates-Dooley No. 1 Creek, C SW NE Sec. 35-18-30. Drlg. 2,167 ft.

Chaves County

E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 862 ft.; S.D.O.

Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 20 ft.; R.U.S.T.

Interstate Minerals, Inc., No. 1 Dunigan, NW cor. Sec. 15-15-30. T.D. 2,485 ft.; S.D. for csg.

J. & L. Drlg. Co. No. 2 Hurd, SW Sec. 11-11-26. Drlg. 1,300 ft.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.

James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 404 ft.; S.D. repairs.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Dk.; contr. to Elmer J. Fisher.

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. Drlg. below 3,950 ft.

McKinley County

Petroleum Production Corp. No. 1 Santa Fe, NE NE NW Sec. 1-17n-9w. Drlg. 600 ft. (form. New State Oil Co.)

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Rio Arriba County

Continental Oil Co.-L. M. Hughes No. 1 Esquibel, unsurveyed; approx. Sec. 1-28n-4e. Drlg. 1,715 ft. in Muddy sd.; no shows O.G. or W.
Oil City Pet. Co. No. 1 Azotea, SW SW NE Sec. 11-31n-2e. Spdg.

San Juan County

Continental Oil Co. No. 80 Rattlesnake, SW SW NW Sec. 1-29n-19w. R.U. (first report).
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. below 100 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. S.D. 660 ft. for 10-in.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,893 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Belen gr., SE NW Sec. 16-3n-1e. T.D. 2,965 ft. (C.D.); C.O.

Torrance County

Drice Co. No. 1 Garland, NE SE NE Sec. 32-7n-7e. T.D. 1,188 ft.; cmtd. caves 1,111-1,150 ft.; W.O.C.
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE Sec. 32-7n-7e. Drlg. 980 ft.
Wilson et al No. 1 Pace, NW NW SW Sec. 12-6n-7e. R.U. to C.O.; old T.D. 2,215 ft.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW Sec. 23-7n-1e. Drlg.; W.O. rotary.
C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. T.D. 900 ft.; R.U.R.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. T.D. 303 ft.; W.O. 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. T.D. 1,840 ft.; rng. 6¼-in. with bttm. hole packer to top Dakota.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. T.D. 1,220 ft.; cmtd. 13⅜-in.; W.O.C.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. Drlg. 2,075 ft. sh.
R. E. Hawks No. 1 Orndoff, NE SW NE Sec. 3-19s-70w. T.D. 1,650 ft.; C.O. to D.D.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE Sec. 36-7s-88w. T.D. 1,502 ft.; ran 6⅝-in. to 1,420 ft.; U.R. at 1,430 ft.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW Sec. 11-2n-81w. S.D. 3,920 ft.; will D.D. to Morrison.

Huerfano County

J. G. Tomkins & Sons No. 1 Pressey, NE NE NE Sec. 10-29s-69w. S.D. 411 ft.; (prospecting for coal).
S. W. Pressey No. 2 Alamo, C SW SE Sec. 3-27s-68w. S.D. 1,320 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. Drlg. below 1,610 ft.

Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE Sec. 19-33s-61w. Drlg. 2,308 ft.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW Sec. 36-8s-91w. Drlg. 6,807 ft. silty sh. and sd. streaks.

Moffat County

Morapas Pet. Corp. No. 1 Coles, SW SW SE Sec. 1-3n-92w, S.D. 2,750 ft. for 8¼-in.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. S.D. 530 ft.; run and cmt. 10-in.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. S.D. 4,720 ft. for repairs.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 6,080 ft.

Prowers County

The Continental Oil Co. No. 1 Ruby, test on the Cottonwood structure, is reaching a critical stage. It is bottomed at 5,149 feet and reaming at 2,830 feet to run the 9⅝-inch. Revised figures show that it had the base of the Cherokee at 4,965 feet, conglomerate at 4,965-5,050 feet and top of the Mississippi lime at 5,050 feet.

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,149 ft.; rmg. at 2,830 ft.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. Drlg. 435 ft.
C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 700 ft.; prep. to run 6¼-in.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. Drlg. 2,798 ft. blk. sh.

Routt County

L. C. Craig and E. L. Moore No. 1-X Erwin, C SW NE Sec. 33-7n-85w. Ran csg. to 125 ft. and S.D.
Mid-Colorado Pet. Co. No. 1 Omholt, NE NE SE Sec. 29-4n-87w. Drlg. white sd. at 3,140 ft.; top 3,120 ft.
Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE Sec. 1-6n-86w. T.D. 1,100 ft.; W.O. csg.

WYOMING

Big Horn County

A. L. Rankin No. 1 Karjajla-Rankin, C SW NW Sec. 10-54n-94w. Drlg. 623 ft.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. T.D. 850 ft. on top Kimball sd.; rng. 8¼-in.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,420 ft.; fsg.

Campbell County

Frye & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. T.D. 723 ft.; rng. 5⅛-in. for W.S.O.

Carbon County

Locations for two important wildcats were released by C. D. Cunningham and associates. One of these is on the Flattop dome 7 miles north of the town of Medicine Bow on an eroded anticline formed in the Chugwater red beds, in their No. 1 Union Pacific-Wolfe, SE NW SW Section 7-23n-78w. Location is about 2½ miles southeast of the gas discovery on the Oil Springs dome in SE NE SE Section 3-23n-79w, in which the Cunningham Oil Co., of which Mr. Cunningham is president, brought in a 55,000,000-foot gas well last month in the Sundance. The Flattop test will have the Embar, Tensleep and Madison for its objectives and will go to the granite.

The other test is No. 1 Union Pacific-Fee, NW SE NE Section 21-22n-78w, on the Horne dome, 1½ miles southeast of Medicine Bow. It is on an east-west trending anticline on the St. Mary's line of folding. It lies to the east of the Allen Lake gas field, on the same axis, but separated from Allen Lake by a sharp syncline. Geology is by Thomas S. Harrison. Objectives will be sands in the Cretaceous and possibly the Sundance. It will be drilled with rotary. Contracts for both tests went to Manning & Martin, Inc. The Flattop test, which was spotted on geology by Everett S. Shaw, will be drilled with cable tools.

C. D. Cunningham et al No. 1 Union Pacific-Fee, NW SE NE Sec. 21-22n-78w. Bldg. rig.
C. D. Cunningham et al No. 1 Union Pacific-Wolfe, SE NW SW Sec. 7-23n-78w. R.U.C.T.
Ohio Oil Co.-California Co. No. 5-A Kyle, C NE NW Sec. 26-21n-97w. R.U.R.
Ohio Oil Co. No. 2-A Baker, NW SW SW Sec. 2-23n-79w. Drlg. 1,276 ft.
Sinclair-Wyoming Oil Co. No. 3 Mahoney, C SE NW Sec. 34-26n-88w. Drlg. r.b. 3,604 ft.
Ohio Oil Co.-California Co. No. 3-A Kyle, C SW NE Sec. 26-21n-79w. Drlg. 7,391 ft. in Tensleep.
Producers Oil Co. No. 1 Lake Valley, 200 ft. C of CNL Sec. 14-20n-88w. Drlg. 1,916 ft.

Converse County

Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. T.D. 640 ft.; W.O. 8¼-in.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. Drlg. 1,500 ft. r.b.
Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. Drlg. 470 ft.
New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW Sec. 25-32n-69w. T.D. 670 ft.; cmtd. 6⅝-in. at 655 ft.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. U.R. 8¼-in. below 2,000 ft.
Wyoming Southern Oil Co. No. 1 Winda, SW NE NW Sec. 6-31n-69w. Loc.
Blue Ridge Oil Co. No. 1, SW NW SE Sec. 29-32n-69w. R.U. machine (first report).

Fremont County

Lincoln O. & G. Co. No. 1 Shoshone, NW NW SE Sec. 23-1s-1e. Drlg. 305 ft.
Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. T.D. 3,378 ft.; fsg.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. Drlg. 1,150 ft.
Ben Stewart No. 1 Darnell, NE SE Sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.
C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. Drlg. 400 ft.

Hot Springs County

The California Exploration Co. No. 1 Government, NE SE NE Section 12-44n-97w, joint with the California Co., the discovery well on the Waugh dome in 1935, was plugged and abandoned at 4,123 feet after drilling deeper to test the Tensleep, which had water. It pumped 538 bbls. of 27.8-gravity black oil from Embar at 3,806 feet, total depth, early in the spring of 1935. It finally went to water and was deepened to test the Tensleep. Only one other well has been drilled on the dome, an east offset, which was plugged and abandoned.

D. D. Gibson No. 22 fee, NE NW SW Sec. 35-43n-94w. Drlg. 1,006 ft.
Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE Sec. 13-44n-98w. T.D. 300 ft.; trying to set 20-in. at 215 ft. for W.S.O.
J. W. Bailes No. 1 Govt., SE SW Sec. 28-43n-93w. T.D. 1,082 ft.; P.B. to 1,015 ft.; tstg.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 865 ft.

Natrona County

The Stanolind Oil & Gas Co. No. 26 Wyoming Associated, C SE SW Section 26-40n-79w, was completed in the Tensleep at 4,020 feet after plugging back from 4,052 feet and perforating the 6⅝-inch at 3,988-4,005 feet. It is flowing 168 bbls. of fluid per day, of which 42 per cent is water, through a 3/32-inch choke on the 2-inch tubing.

General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Drlg. 3,600 ft.

Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW Sec. 35-40n-78w. Drlg. 2,348 ft.

Niobrara County

The Continental Oil Co. has a near completion in Lance Creek in its No. 3 Apex-3, a south offset to the Minnelusa Oil Co. No. 1-A Lamb. It is waiting on cement after setting the 7-inch top of the pay at 5,315 feet. It had slight saturation in the top of the sand at 5,344 feet and improved with depth.

Continental Oil Co. No. 13 Tom Bell, SE NE SE Sec. 33-36n-65w. Loc.
Ohio Oil Co. No. 11 Lamb Acct. 2, SW SE SE Sec. 5-35n-65w. Drlg. 2,034 ft.
Fall River Royalty & Producers Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. S.D. 275 ft. for 15½-in.; top Dak. 265 ft.
Continental Oil Co. No. 3 Apex-3, NW NE NW Sec. 34-36n-65w. T.D. 5,388 ft.; 7-in. 5,315 ft.; W.O.C.
Continental Oil Co. No. 7-B Schuricht, NW NW SE Sec. 6-35n-65w. Loc.
H. D. Moore et al No. 1 Beregren, NW Sec. 23-35n-63w. Drlg. 1,365 ft.
Continental Oil Co. No. 4-A Diehlman, NE NW NE Sec. 8-35n-65w. Loc. (W. offset to Minnelusa Oil Co. No. 1 H. & M.-3).
Adams Oil & Gas Co. No. 1 Baker, NE NE SW Sec. 8-35n-65w. Tent. loc.

Park County

Ohio Oil Co. No. 1 Trans-Ark., CSL SW SW Sec. 30-57n-98w. Drlg. 6,364 ft.; top r.b. 6,225 ft.
Valentine & Watson No. 1 Johnson, NE NE Sec. 6-57n-99w. T.D. 2,490 ft.; fsg.; 1,300 ft. O.I.H.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. Drlg. 6,857 ft.
Continental Oil Co. No. 1 Northern Pacific, SE SE NW Sec. 23-58n-98w. Drlg. r.b. 3,292 ft.; prep. to cg.

Sublette County

Frontier Pet. Co. No. 1 Govt., SE SE SW Sec. 1-28-114w. Drlg. 2,249 ft.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd ranch, SE SE Sec. 31-31n-112w. S.D. 100 ft.
Wyo. Pet. Co. No. 1 Chas. Budd, C NE NE Sec. 10-29n-113w. Drlg. 735 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.
Texas Co. No. 3-G NE NW SW Sec. 27-27n-113w. M.I.M.

Sweetwater County

Selegna Oil Co. No. 1 Union Pacific, SW SW Sec. 11-20n-104w. T.D. 4,996 ft.; R.U.R. to D.D.
Sinclair-Wyoming Oil Co. No. 79 Lost Soldier, SE NE NE Sec. 10-26n-90w. Drlg. 916 ft.

Uinta County

Stove Creek Oil Co. No. 1 Govt., C SE NW Sec. 26-14n-119w. Res. at 1,400 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 300 ft.

Washakie County

Fison Oil Co. No. 1 Govt., CSL NE SE Sec. 24-47n-90w. (Sherard dome). Set 8¼-in. at 116 ft.; W.O.C.
Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. R.U.

Weston County

There were two completions in the Osage field, one of which marks an extension of half a mile on the southwest in a district which is beginning to attract renewed interest. This is George Keisling No. 1, NW NE NE Section 35-46n-64w, which filled up 350 feet between runs and which it is expected will make somewhere between 100 and 350 bbls. daily when shot and cleaned out. It had the top of the Greenhorn at 1,029 feet and had the top of the main Muddy pay at 1,928 feet. The nearest producer is in the SW of Section 25. Last month Updike Brothers completed their No. 6, CSL NE SW Section 25 for 35 bbls. per day from sand at 1,589-91 feet. The Keisling well is about 300 feet lower structurally than the nearest producer as shown on U. S. Geological Survey map. A dry hole a mile to the north and another to the east indicates that the well is on a southwest trend from the main pool. The old Producers & Refiners Corp. once had this acreage but gave it up on account of excessive overriding royalty. Updike Brothers are drilling one-fourth of a mile to the southwest.

The Des Moines-Osage Oil Co. No. 15, SW SW SE Section 30-46n-63w, made 10 bbls. per day naturally from sand at 1,357-70 feet and 1,383-96 feet. It was shot and is cleaning out.

The Bradbury & Krause Development Co. has begun reconditioning the old wells it acquired recently in the Wakeman pool. These wells were drilled 20 years ago. One well is on production, making 3 bbls. per day.

John Brorphy No. 1 George, SW SE NW Section 26-48n-64w, a test of the Minnelusa on the Pump Creek dome, passed out of that formation at 2,173 feet and drilled 20 feet of green and blue shale, showing water in thin streaks of sand. It is shut down for orders.

Taylor, Dodge & Pauley No. 2, SE SE NW Sec. 17-46n-63w. Drlg. below 100 ft. (first report).
Sackett & Butcher No. 1, C NE NW Sec. 23-46n-64w. Spdg. (first report).
Updike Bros. No. 1, NE SW NE Sec. 35-46n-64w. Rng. csg. thru Greenhorn.
Hugh Updike No. 1, CEL NW SE Sec. 15-46n-64w. Drlg. below 200 ft.

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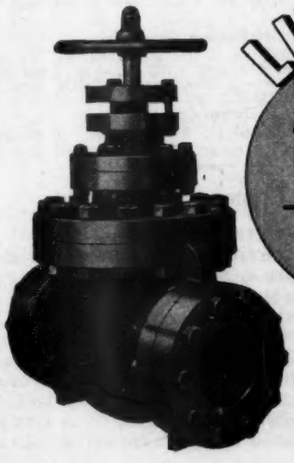

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Federal Oil Co. No. 9, CNL SE SE Sec. 15-46n-64w. Ready to spd.
Gose Oil Synd. No. 1, NE NE NE Sec. 28-47n-63w. C.O. after landing 4½-in. at 4,900 ft.
West Osage Oil Co. No. 3, SW SE NE Sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Brorphy No. 1 George, SW SE NW Sec. 26-48n-64w. S.D.O. 2,193 ft.

MONTANA

Gasoline sales in Montana amounted to 16,061,333 gallons in July, of which 4,490,421 gallons were imported and 11,570,912 were refined in the state. After deducting exports, consumption in the state was 12,332,726 gallons.

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Carbon County

R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. Drlg. 1,925 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.
R. C. Tarrant No. 2 Heare, NW SE NW Sec. 14-6s-19e. Cmtd. 8¼-in. at 2,335 ft.
Sha-Wa Pet Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res.; will U.R. to bttm. and set csg.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. Drlg. 1,980 ft.; had 17 ft. dry Sunburst sd.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,095 ft.

Daniels County

White Tail Oil & Gas Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. T.D. 1,884 ft.; res. under new management.

Fallon County

Montana-Dakota Utilities Co. No. 45, Unit 7, SE NW SW Sec. 15-6n-60e. Drlg. 190 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. S.D. 1,120 ft.

Glacier County

The only completion in Cut Bank was A. R. Pardue No. 1 Tribal-171, SE SE SW Section 7-32n-5w, in the southern end of the field, which swabbed 180 bbls. first 24 hours from the Cut Bank at 2,702-06 feet and 2,712-39 feet.

The Texas Co. No. 2 Curran, C NW NE Section 8-32n-5w, reported a completion, but not tested, last week, is pumping 12 bbls. per day.

Glacier Prod. Co. No. 1 Mather Unit, SW NE SW Sec. 36-35n-5w. R.U.
Texas Co. No. 2 Govt., NE NW NE Sec. 17-32n-5w. Spdg. 90 ft.
Par Oil Co. No. 1 Tribal-170, SW NW SW Sec. 7-32n-5w. S.D. 375 ft. for new engine.
Santa Rita O. & G. Co. No. 4 Govt., SE SE SW Sec. 5-32n-5w. Drlg. 2,100 ft.
K. D. Pardee No. 1 Tribal-179, SE NW SE Sec. 12-32n-6w. Drlg. 1,200 ft.; 10¾-in. 560 ft.
Dr. Peter Potter No. 3 All.-125, NE NW NE Sec. 12-32n-6w. Drlg. in at 2,878 ft.; 7-in. at 2,878 ft.
Lawler No. 3 Hoerr-Harlan, NE SW SW Sec. 5-33n-5w. Drlg. 2,150 ft.
Glacier Prod. Co. No. 2 Mueller, CSL NE NE Sec. 18-33n-5w. Drlg. 2,950 ft.; 7-in. 2,945 ft.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Loc.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE Sec. 17-33-5w. Drlg. 2,837 ft.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. T.D. 445 ft.; W.O. 15½-in.
O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. Drlg. 779 ft.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW Sec. 3-27n-4w. S.D. 1,932 ft.; will pull 7-in.; U.R. 10-in. and drill to Devonian.

Teton County

California Co. No. 1 Unit, NE SE SW Sec. 26-27n-9w. Drlg. below 560 ft.
Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. Drlg. 2,536 ft.

Toole County

The Montana Gas Corp. No. 2 Clark, C SE SW Section 24-37n-1w, in the Bow and Arrow field near the Canadian line, which was reported a completion last week, but not gauged, made 18,000,000 feet per day when tested. It about equals the discovery well which it offsets on the southwest. Production is from the Sunburst sand at 2,103-40 feet after plugging back from 2,430 feet where it tested the Madison lime.

There was one completion and one new operation in the Kevin-Sunburst field. The Lion Oil Producing Co. No. 4 Haugen, NE SE SE Section 11-35n-3w, is pumping 40 bbls. per day from the Madison after acidizing with 1,000 and 700 gallons. It had the contact at 1,739-40 feet and continued on to 1,756 feet, picking up additional shows below the contact.

The General Oils, Ltd., No. 1 State, SW SE SE Section 36-35n-4w, in West Kevin, between the Kevin-Sunburst and Cut Bank fields, was plugged and abandoned at 1,899 feet. It topped the Madison at 1,853-56 feet and at 1,856 feet was acidized twice without results. It was then deepened to 1,899 feet and shot twice without results. It is located 1⅛ miles to the southeast of the three producers in the West Kevin pool.

A. Beardslee No. 9 Swears, CSL SW NW Sec. 9-35n-2w. Drlg. 300 ft. (first report).
Consolidated Gas Co. No. 3 Lutz, C SW NW Sec. 34-33n-2w. Drlg. 1,502 ft.; top Sunburst 1,477 ft.; 2,000,000 ft. of gas.
Big West Oil Co. No. 3 Engle, CSL SW SW Sec. 1-35n-3w. T.D. 1,625 ft.; drlg. at 1,621 ft.
C. D. Stock No. 3 Haggerty, SE NW SW Sec. 13-35n-2w. T.D. 1,580 ft.; acid. 100 gals.; tstg.
Kluth et al No. 1 Gunderson, SE SW SW Sec. 18-35n-2w. Drlg. 1,653 ft.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. Drlg. 1,510 ft.
Fulton-Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. Cmtd. 12½-in. at 95 ft.; W.O.C.
A. E. Crumley & Son No. 13 Fryberger, CNL NW SE Sec. 24-35n-3w. T.D. 1,610 ft.; pmpg. 10 B.P.D. naturally; will acd. later.
Big West Oil Co. No. 2 Engle, SE SW SW Sec. 1-35n-3w. T.D. 1,602 ft.; sd. 1,573-1,602 ft.; shot 70 qts.; no results; shot again 50 qts.
R. G. Parrant No. 1 Engstrom, NW NW NW Sec. 13-35n-3w. Drlg. 1,625 ft.
V. F. Dahl No. 1 Kimball, SW SE SE Sec. 1-35n-3w. T.D. 1,807 ft.; break at 1,786-1,801 ft.; S.O.; acid. 1,000 gals.; looks like small well.
Pfabe & Engleking No. 2 Hurley, NE NE NW Sec. 8-34n-2w. S.D. 1,456 ft.; would not take acid; will shoot.
H. C. Morton No. 8 Morton, C SW NW Sec. 24-34-2w. S.D. 650 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. S.D. 4,565 ft.; to resume.
Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 1,795 ft.; U.R. 10-in. to set at 1,650 ft.

UTAH

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. Drlg. 1,635 ft.; unable S.O.W. and tst. at 1,255-1,500 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,010 ft.

Summit County

Mountain Fuel Supply Co. No. 1 Wilde, NE SE SE Sec. 9-2n-5e. Drlg. 5,389 ft. in Frontier.
Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE Sec. 3-154n-96w. T.D. 10,281 ft.; D.P. stuck; fsg.

NEBRASKA

Garden County

Bergman & Bull No. 1, Sec. 12-16n-42w. R.U.S.T.

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW Sec. 21-14n-37w. Drlg. sh. 1,200 ft.

Scotts Bluff County

Houston Pet. Co. No. 1 Judd, NE NE NE Sec. 15-22n-57w. Spd. and S.D.

Sioux County

Felmont Oil Corp. No. 1, C SW NE Sec. 21-27n-55w. Drlg. 6,281 ft.
Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE Sec. 15-28-55w. T.D. 6,890 ft.; cmtd. whipstock 4,700 ft.; drlg. by.

Pawnee County

Blazer & McClure et al No. 1 Allen, NW NE SW Sec. 16-1n-10e. S.D. 610 ft.

Richardson County

H. C. Stevens and Ed Uhri No. 1 Harlow Est., C SE NE Sec. 32-1n-13e. S.D. 700 ft.

Adams County

V. N. Souligny et al No. 1 Katzberg, C SW Sec. 26-7n-10w. Rig.

McPherson County

Nebraska Oil Corp. No. 1 McConnell, SE SE NE Sec. 25-17n-31w. Set 4-in. csg. 1,735 ft.; drlg. 2,423 ft.
Pawnee Oil Co. No. 1 Childerston, C NW Sec. 28-18n-31w. R.U.R.

Dawes County

Huber Pet. No. 1 State, SW NE Sec. 16-33n-51w. Rotary rig.

Eastern Fields

(Continued from Page 78)

Gas Co. is down 4,825 feet on the J. C. Fisner and others land; at 4,575 feet on the W. H. Odell land; at 2,585 feet on the Earl K. Johnson land; at 1,960 feet in the Manfred Fisher and others test. The Lima Gas Co. is drilling at 1,880 feet in the A. T. Mairs Heirs test; Glenn Oil & Gas Co. at 1,697 feet on the Mary Beaver farm; Poca Fork Oil & Gas Co. at 2,440 feet in the Levi Combs farm; Spartan Gas Co. at 1,275 feet on the Lock and A. E. Fisher land; Columbian Carbon Co. at 4,085 feet on the L. P. Rollins farm; at 4,740 feet in the Lena Castro test; at 2,242 feet in the W. H. Odell and others test; at 1,400 feet in W. H. Miller and others land and at 495 feet in No. 2 Ida Hughart.

In Elk district, this company is down 3,617 feet on W. B. Fogarty test; 5,098 feet in C. W. Vickers No. 12 with the Oriskany topped at 5,089 feet; 1,716 feet in Bratton Hanna test. The United Carbon Co. is drilling at 690 feet in VanCanterbury test; 4,600 feet in I. C. Miller test in Poca district and 500 feet in J. H. Prillerman, same district.

Outside Deep Tests

In Jackson County, the gauge of the Joe Rubin well on the W. J. Brown farm in Ravenswood district on the Ohio River and has not been made on account of the hole bridging after the shot. The hole has not been cleaned to the bottom.

In Pleasants County, the test of the Columbian Carbon Co. on the Giles Hammat farm in Grant district is still held up with a fishing job and there is a production of 15 bbls. a day from the shales which is being swabbed into a tank.

New Work

In Tyler County, the Neely Oil Co. has a location on the Oscar Martin farm in Union district. In this district J. E. Haught has a location for a test on the Jackmaline Thorn farm. In Wirt County, the Realty Oil Co. made a location on the C. C. Menefee farm in Burning Springs district.

In Doddridge County, H. R. Wright and S. J. McIntire reached 1,020 feet on the Nancy Bates farm in McClellan district and are fishing for casing. In West Union district, Hope Natural Gas Co. is drilling at 1,150 feet in the G. W. Farr test. In Central district, James Prunty has a location for a R. L. Boyce test.

In Upshur County, the Union Gas Corp. has a rig standing on the J. H. Cunningham farm, Meade district. In Banks district, the Hope Natural Gas Co. is down 2,140 feet in the test on the Hazen Phillips farm.

La.-Ark. Fields

(Continued from Page 79)

is being attempted. Standard Oil Co. of Louisiana No. 1 Crumpler, SE cor. SW NW Section 15-17-19, is making another squeeze job.

After making 33 per cent salt water on a production test, the test was squeezed at 7,395 feet, and drilled out to 7,409 feet. The hole was tested with water and high pressure gas before perforating casing. After perforating, it flowed at the rate of 50 to 65 bbls. per hour, with salt-water content running 50 to 95 per cent. The well was killed and another squeeze job is under way. Total depth of the test is 7,500 feet.

To the west, the Magnolia field is due for important tests, with four drilling wells approaching the sand on the east, west and southeast of the discovery well.

Schuler Completions

The Schuler field of Union County, South Arkansas, gained three good producers this week, with completion of one Lion Oil Refining Co. and two Phillips Petroleum Co. wells in the Jones sand.

Lion Oil Refining Co. No. 4 Marcus, Lot 3, SW Section 18-18-17 made an initial gauge of 1,370 bbls. through a 20/64-inch choke with tubing pressure at 775 pounds and casing pressure at 975 pounds.

Phillips Petroleum Co. No. 1 Miller, Lot 4, SW Section 18-18-17, came in for 715 bbls. daily through a 24/64-inch choke with tubing pressure of 1,100 pounds, casing pressure of 1,150 pounds and total depth at 7,734 feet.

The Phillips Petroleum Co. No. 1 Sewell, Lot 5, SW Section 7-18-17 gauged 361 bbls. daily through a quarter-inch choke, tubing pressure 300 pounds, casing pressure 1,200 pounds and total depth 7,725 feet.

Shreveport Activity

With a spacing rule temporarily settled upon by conservation department officials, drilling in the Shreveport field is now getting under way. R. E. Allison is beginning a west offset to his discovery well, and four other permits have been issued for drilling in the vicinity of the city, all, however, located outside the city limits.

In Panola County, the Texas Company is drilling below 11,100 feet in a deep wildcat in the Bethany gas field. The test is headed for the Big lime, or Smackover lime, as it is termed in North Louisiana and Arkansas.

Kansas Developments

By
DAL DALRYMPLE

Connection of Stumps Pools Proven in Ellsworth County

A midway test between the Stumps and North Stumps pools in Ellsworth County was assured the past week at Atlantic Refining Co. No. 1 Dougherty, SW SW NW Section 33-17-10w, proving the connecting link between the two areas. It had Arbuckle lime pay at 3,266-70 feet, total depth, and operators set 7-inch casing on top of the lime at 3,249 feet. When plug was drilled, 2,900 feet of 41.5-gravity oil rose in the hole in 15 hours and later the operators swabbed 205 bbls. of oil in five hours. Location is one-half mile north of the Stumps pool and an equal distance south of North Stumps. Three offsets will be required.

Phillips Petroleum Co. No. 2 Michel, SE SW NW Section 36-14-14w, opened a new producing horizon in the Michel pool, 6 miles south of Russell in Russell County. It had initial yield of 72 bbls. of oil daily from Topeka lime at plugged back depth of 2,877 feet. It had failed to find production in Lansing-Kansas City lime, the pay zone in the other three producers in the pool.

Bunte Brothers and Jock Garden No. 1 Shepherd, SE cor. Section 10-27-10w, gave promise of opening the first oil pool to be found in Kingman County in seven years. It swabbed at the rate of 6 bbls. of oil an hour from a shallow sand topped at 3,500 feet, production being through perforations at 3,500-10 feet. It was shut in pending further tests.

A deeper pay zone was opened in an old shallow producing area 6 miles southeast of Independence, Montgomery County, at E. W. Creel No. 1 Thompson, SW cor. Section 12-33-16. Bottomed at 1,377 feet, oil was reported to have risen 1,000 feet in the hole in eight minutes, with the volume of crude increasing to within 100 feet of top of the well. A production test was due. Five nearby wells produce from a shallower zone.

Wildcat Activity

H. L. Rowley and others No. 1 Sittner, SE SE NE Section 35-21-12w, 1½ miles northeast of the South Sittner pool in Stafford County, was completed at 3,575 feet, total depth, swabbed 165 bbls. of oil in 2¾ hours, was acidized, pumped 263 bbls. and 206 bbls. in two four-hour tests, and made potential of 1,230 bbls. of oil. The wildcat topped anhydrite at 620 feet, Fort Riley 1,740 feet, Topeka lime 2,830 feet, Lansing lime 3,234 feet, conglomerate 3,490 feet, Simpson formation 3,520 feet, Arbuckle lime 3,565 feet.

C. E. Ash, James Hershey and Crown Petroleum Co. No. 1 Wolf, SE SW SE Section 36-19-21w, Barton County pool opener, was acidized, pumped 84 bbls. of 39-gravity oil in each of two four-hour tests and made potential of 501 bbls. of oil, with 45 bbls. of water. It topped anhydrite at 555 feet, Topeka lime 2,700 feet, Kansas City lime 3,085 feet, conglomerate 3,330 feet, Arbuckle lime 3,346 feet, and was bottomed at 3,374 feet. The new area, named the Wolf pool, is 1¾ miles northwest of the West Ellinwood pool.

C. B. Davis and others No. 1 Smith (Oswald), SW NW NE Section 11-12-16w, was completed at 3,191½ feet, total depth, opening a new producing area one-half mile north of the Blue Hill-Lansing lime pool in Ellis County. It swabbed 160 bbls. of oil in 12 hours and on potential test pumped 78 bbls. the first four hours, 38 bbls. the next four hours and made potential of 225 bbls. Gravity of the oil was 30.9 degrees.

George Hinkle and others No. 1 Kaufman, SE SE NW Section 10-15-12w, Russell County wildcat, found Arbuckle lime at 3,171 feet, had a hole full of water at 3,192-94 feet and was abandoned at 3,201 feet, total depth.

Silverstine & George No. 1 Otte, SE SE NW Section 2-19-14w, wildcat location in Barton County, was abandoned.

Vickers Petroleum Co. No. 1 Bozarth, C SW SW Section 15-5-24w, wildcat in Norton County, had anhydrite at 1,920 feet, Fort Riley 2,480 feet, Howard 3,247 feet, Topeka lime 3,270 feet, Lansing lime 3,479 feet, Arbuckle lime 3,840 feet and was dry and abandoned at 3,884½ feet, total depth.

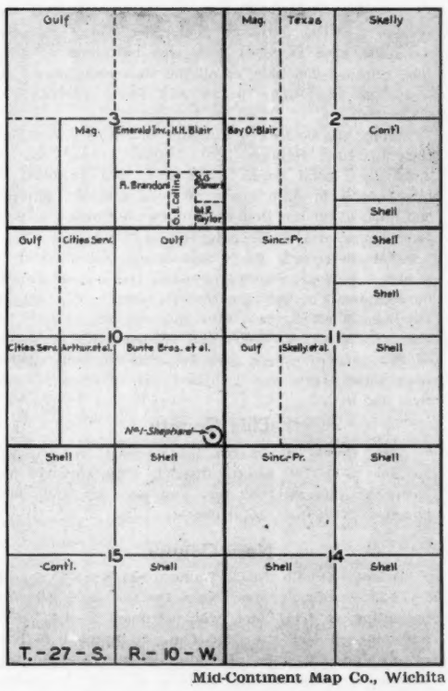
Tide Water Associated Oil Co. No. 1 Noel, NE NE SW Section 28-23-5, wildcat in Butler County, was dry and abandoned in Arbuckle lime at 2,524-50 feet. total depth.

W. I. Dustin and others No. 1 Warner, SE NW NE Section 17-27-5, an old wildcat in Butler County, was deepened from 2,008 feet to 2,178 feet and was dry and abandoned.

Simpson Oil Co. No. 1 Equitable, SW cor. Section 15-25-3, Butler County wildcat, had Mississippi lime at 2,779-3,090 feet, Viola lime 3,159 feet, total depth 3,162 feet, had a hole full of water and was abandoned.

Cities Service Oil Co. and others No. 1 Flora, SW SW NE Section 12-19-10w, Rice County wildcat, topped conglomerate at 3,270 feet, Arbuckle lime 3,294 feet and was dry and abandoned at 3,338 feet, total depth.

New Kansas wildcats included the following: Lana-



Mid-Continent Map Co., Wichita

Bunte Brothers and associates No. 1 Shepherd, Section 10-27-10w, was showing as a small producer to open an area in Kingman County

han Drilling Co. No. 1 Lagree, SE cor. Section 4-23-3w, Harvey County, was a rotary rig; Glimac and others No. 1 Malone, SE SW NW Section 36-20-10w, Rice County, was a location on a Gulf farmout; Power Oil Co. and Olson Oil Co. No. 1 Noel, C E half E half NE Section 12-4s-21w, Norton County, was rigging up rotary. Hapenny No. 1 Evers, SE SE NE Section 27-31-2e, an old wildcat in Sumner County, bottomed at 2,030 feet, was cleaning out preparatory to deepening.

Russell County

Cities Service Oil Co. No. 1 Tittle D, NW NW NE Section 14-15-14w, Trapp field, Russell County, found Lansing lime at 3,078 feet, total depth 3,111 feet, plugged back to 3,104 feet and was acidized. It pumped 266 bbls. of oil the first four hours, 233 bbls. the next four hours and made potential of 1,340 bbls. of 38-gravity oil.

Brunson and others No. 1 Krug, NE NE SE Section 13-15-14w, topped Arbuckle lime at 3,349 feet, had a hole full of water at 3,370-73 feet, total depth, and was abandoned.

W. I. Southern, Inc., No. 1 Hinderliter, SW NW NW Section 33-15-13w, Eichman area, had Arbuckle lime at 3,242 feet, total depth 3,353 feet, was treated with acid, pumped 39 bbls. of oil the first four hours, 21 bbls. the next four hours and was rated potentially at 129 bbls. Gravity of the oil was 39 degrees.

Stewart No. 1 Bronson, NW NE SE Section 20-11-15w, Fairport area, pumped 38 bbls. of 40-gravity oil the first four hours, 73 bbls. the next four hours and made potential of 225 bbls. It had Lansing lime at 2,927 feet, pay 2,960 feet and was bottomed at 2,995 feet.

Mid-Continent Petroleum Co. No. 1 Rogg, NW NW NE Section 32-14-13w, was completed at 2,911 feet, total depth, linking the Hall and Letsch pools. It entered Lansing lime at 2,867 feet and had best pay at 2,898 feet. After acidizing three times with a total of 12,000 gallons, it pumped 297 bbls. of 39-gravity oil the first four hours, the same amount the next four hours and made potential of 1,784 bbls. Three offsets are to be drilled.

Estimated Daily Production

Estimated daily production for Kansas for the week ending September 3, and for the preceding week was as follows:

	Barrels	
	Aug. 27	Sept. 3
Oxford City	2,625	1,975
Burrton	9,275	9,350
Ritz-Canton	6,975	6,025
Graber	2,975	3,025
Hollow-Nikkel	2,875	2,950
Lerado	975	1,075
Voshell	2,550	2,575
Wellington	2,300	3,550
Ellsworth County:		
Lorraine	1,975	2,450
Other pools	1,395	1,900
Rice-Barton counties:		
Bloomer	2,150	2,250
Chase	4,925	4,725
Geneseo	3,100	3,375
Raymond	1,000	1,025
Silica	10,900	10,900
South Silica	1,650	2,225
Keesling	750	800
Wherry	2,400	2,950
Miscellaneous Barton	6,580	5,345
Miscellaneous Rice	4,270	4,110
Russell County:		
Fairport	1,980	1,850
Gorham	1,100	1,395
Russell	970	1,320
Sullivan	4,890	5,555
Trapp	8,460	8,935
Miscellaneous Russell	6,670	7,240
Sedgwick County:		
Valley Center	1,050	1,040
Miscellaneous	2,710	1,790
Ellis County:		
Bemis	3,855	4,750
Miscellaneous	2,515	2,790
Kingman County	550	545
Stafford County	4,165	4,490
Greenwood County	9,450	9,475
Butler County	18,250	18,650
Other fields	22,940	22,970
Total Kansas	161,200	165,375

Barton County

Shell Petroleum Corp. No. 2 Hoffman C, NE NE SE Section 1-16-14w, Trapp field, Barton County, found Arbuckle lime at 3,328 feet, total depth 3,354 feet, was acidized, pumped 453 bbls. of oil the first four hours, 434 bbls. the next four hours and made potential of 2,602 bbls.

Continental Oil Co. No. 1 Underwood, NW NW NE

"LET THE PUNISHMENT FIT THE CRIME"

Says one of the songs of Gilbert and Sullivan, who composed many lovely light operas. We say:

Let The Pump Fit The Conditions

There is no one pump which will satisfactorily handle all the conditions existing at the bottom of the countless oil wells in this country, but in the O'Bannon line there is some one pump which will qualify for any particular well—regardless of the conditions found.

Take the O'Bannon Arrow Rod Pump—unsurpassed for severe sand or corrosive conditions. Here is what J. P. Payne, superintendent for the D. B. Malernee Oil Company at Overton, Texas, recently said about the five O'Bannon Cro-Lay Arrow Rod Pumps he bought and ran in May, 1937. These pumps make his allowable in four hours a day, pumping dead fluid, and none have been pulled since they were run.

"I consider this a very remarkable record for O'Bannon Arrow Pumps, all the more so when considering the particular area in which they are operating."

Let one of our representatives help you to determine the O'Bannon Pumps that will best handle conditions peculiar to your wells.

Sold by Supply Stores

Manufactured in Tulsa by the

Walter O'Bannon Co.

Arrow Stationary Barrel Rod Pump

O'BANNON ARROW PUMPS

Section 10-17-13w, South Ainsworth area, found Arbuckle lime at 3,360 feet, was bottomed at 3,372 feet, and swabbed 185 bbls. of oil in seven hours. It was acidized, pumped 268 bbls. of 38-gravity oil the first four hours, 242 bbls. the next four hours and made potential of 1,454 bbls.

Eason Oil Co. No. 2 Ainsworth, NW SE SE Section 33-16-13w, Ainsworth area, topped Arbuckle lime at 3,412 feet, found granite at 3,742 feet, total depth, and was completed as a water disposal well.

Stanolind Oil & Gas Co. No. 15 Fred Panning, NE corner Section 2-20-11w, Silica field, had Arbuckle lime at 3,296 feet, total depth 3,302 feet, was shot and acidized, pumped 31 bbls. and 33 bbls. in four-hour tests, respectively, and made potential of 189 bbls.

McPherson County

Max Reynolds No. 1-A Suffield, SW NW SE Section 25-19-2w, an old well in the Ritz-Canton field, McPherson County, was deepened from 2,947 feet to 2,965 feet, total depth, and recompleted. It flowed 118 bbls. of oil, with 8 per cent water, in 24 hours.

Stafford County

Atlantic Refining Co. No. 7 Gates, NE SE SE Section 27-21-13w, Gates pool, Stafford County, made potential of 1,949 bbls. of oil after treating with acid. It entered Arbuckle lime at 3,635 feet and was bottomed at 3,644 feet.

Reno County

Barnsdall Oil Co. No. 1 Sabin C, NW NW SE Section 11-23-4w, Burrton field, Reno County, an old well, was deepened from 3,566 feet to Arbuckle lime at 2,769-75 feet, total depth, and was recompleted. After acidizing, it pumped 18 bbls. of oil the first four hours, 19 bbls. the next four hours and made potential of 165 bbls. of oil, with much water.

Rice County

Transwestern Oil Co. No. 2 Habiger B, NE cor. Section 5-18-10w, Stumps pool, Rice County, topped Arbuckle lime at 3,234 feet, was bottomed at 3,263 feet, pumped 255 bbls. of oil the first four hours, 262 bbls. the next four hours and made potential of 1,530 bbls.

Skelly Oil Co. No. 4 Vokland B, SW SW NW Section 5-18-10w, Habiger pool, found Lansing lime at 2,925 feet, total depth 3,012 feet, and swabbed 65 bbls. of oil in nine hours. It was acidized, pumped 280 bbls. of oil the first four hours, 203 bbls. the next four hours and made potential of 1,215 bbls.

Shell Petroleum Corp. and others No. 1 Saint, C S half S half SE Section 10-19-9w, the second well to be completed in the new North Cramm pool, pumped 194 bbls. of oil the first four hours of official test, 165 bbls. the next four hours and earned potential rating of 992 bbls. of oil. It had Arbuckle lime at 3,259-65 feet, total depth and swabbed 241 bbls. of oil the first six hours.

Ellis County

Wolf Creek Oil Co. No. 1-A Bemis C, SE SW SW Section 33-11-17w, Shutts district, Ellis County, had Arbuckle lime at 3,662 feet and was dry and abandoned at 3,678 feet, total depth.

Ness County

Oriental Oil Co. No. 2 Tenney, NE NE SW Section 19-18-25w, Aldrich area, Ness County, had pay dirt beginning at 4,441 feet, was bottomed at 4,475 feet, and plugged back to 4,454 feet. It pumped 25 bbls. of oil and 220 bbls. of water in one 24-hour test, pumped 1 bbl. of oil and 20 bbls. of water in another 24-hour test and was abandoned.

Cowley County

Lloyd, Frost & Study No. 2 Elder, SW NW NE Section 4-32-3e, Weathered pool, Cowley County, topped Arbuckle lime at 3,260 feet, total depth 3,287 feet, and made potential of 147 bbls. of oil, with 60 per cent water. It was plugged back to 3,181 feet, shot and acidized, pumped 346 bbls. of oil the first four hours, 278 bbls. the next four hours and made potential of 1,670 bbls. with 30 per cent water. Mississippi lime was found at 3,015 feet.

Texas Co. No. 1 Goodrich, SE SW SE Section 21-31-4, Hittle pool, an old well, was deepened from 2,381 feet to Arbuckle lime at 3,274-82 feet, total depth, pumped 393 bbls. of oil the first four hours, 388 bbls. the next four hours and made potential of 2,330 bbls. Gravity of the oil was 39 degrees.

Illinois Fields

(Continued from Page 75)

ton, C SE SE Section 12-4n-11w, moving in machine.

In Fayette County, Rosenthal No. 1 Washburn, NE SE NW Section 30-6n-3e, rotary rigged up; Ray Brown No. 2 Hopper, NE SE SE Section 12-7n-2e, rotary rigged up; Hausman and others No. 1 Dora Townsend, 175 feet from S and 330 feet from E lines Section 12-7n-2e, rotary tools in; Canary and others No. 2 Sefton, 1,145 feet from N and 175 feet from E lines NE quarter Section 12-7n-2e, rotary rigged up; Luttrell & Holleman, No. 1 Bald Hill School, 1 acre tract SE cor. NW Section 16-7n-3e, rig up; Max Pray No. 3 Ferguson, 385 feet from W and 660 feet from N lines NW quarter Section 18-7n-3e, drilling below 1,400 feet; Shell Petroleum Corp. No. 1 Harper, SE SE NE Section 18-7n-3e, drilling below 800 feet; Dixie Oil Co. No. 1 Arnold, SE SE SW Section 19-7n-3e, machine rigged up; Mabee Drilling Co. No. 1 First National Bank, NE NE SE Section 30-7n-3e, drilling at 600 feet; Carter Oil Co. No. 1 Ann Hopper, NW SW NW Section 14-8n-3e, drilling below 600 feet; W. C. McBride Inc. No. 4 H. Stokes A, SE NW NE Section 14-8n-3e, drilling below 600 feet; Carter Oil Co. No. 1 John Hogan, NE NW NW Section 27-8n-3e, rig up; Jarvis Bros. No. 4 Sinclair, SE NW NE Section 29-8n-3e, drilling at 1,250 feet; Jarvis Bros. No. 5 Sinclair, SE NE NW Section 29-8n-3e, location; Jarvis Bros. No. 6 Sinclair, SW NE NW Section 29-8n-3e, location; Allied Oil Corp. No. 1 Tom Carter SE cor. NE SW Section 31-8n-3e, rig up; L. & G. Oil Co. No. 2 Emerson, Lot 17, Louden town lot, NE SE SW Section 31-8n-3e, location; L. & G. No. 3 Emerson, C Lots 1 and 2, SE cor. NE SW Section 31-8n-3e, location; Yokey and others No. 2 Long, Lot 4, Louden, SE cor. NE SW Section 31-8n-3e, cellar and pits; W. B. Johnston Drilling Co. No. 3 Goetting, SW cor. NW NW NW Section 32-8n-3e, spudded; Pete Hoffman No. 1 Good, NE SW NE Section 34-8n-3e, rig up; Bell Oil & Gas Co. No. 1 Sloan, SE cor. SW Section 4-8n-3e, drilling.

In Champaign County, Sidney Oil & Gas Co. No. 1 Wendling, SW cor. SE NE SE Section 10-17n-10e, location.

In Jefferson County, Carter Oil Co. No. 1 Sanders, SW SW SW Section 4-1s-2e, rotary tools in; Sam Jennings and others No. 1 Pattor., NW cor. NE SW Section 1-1s-1e, a wildcat, drilling below 400 feet.

In Wayne County, Fairfield area, Texas Co. No. 1 Lyons, NE SW SW Section 33-2s-7e, rotary tools in; Texas Co. No. 2 Koontz, SW NE SW Section 33-2s-7e, location; H. H. Weinert No. 3 Twist, NW NW SW Section 33-2s-7e, location.

In Fayette County, Jarvis Bros. No. 3 Sinclair, NW NW NE Section 29-8n-3e, total depth 1,479 feet, set 7-inch casing at 1,445 feet.

Completed Wells

Penn-Illinois Oil & Gas Co. No. 1 A. D. Nichols, NE SW SW Section 22-4n-2e, Marion County, was dry and abandoned at 2,265 feet. McClosky lime was topped at 2,225 feet.

In Clinton County, B. M. Trahan No. 1 Nicolay, SW NW NE Section 14-2n-1w, was dry and abandoned at 1,795 feet. Benoist sand was penetrated at 1,517-34 feet.

In Marion County, Centralia pool, J. P. Ostron No. 1 B. G. Harvey, NE cor. SW NW NW Section 17-1n-1e, had Benoist sand at 1,372-84 feet, pumped 100 bbls. in 24 hours; J. P. Ostron No. 1 Cramer, SW cor. Section 18-1n-1e, sand at 1,354-74 feet, shot with 10 quarts, pumped 100 bbls. of oil and some water; Bert Field No. 1 M.&I.R.R., sand at 1,351-78 feet, pumped 230 bbls.; Parshall & Graham No. 1 Shook, NE SE NE Section 9-1n-1e, was dry and abandoned at 1,930 feet.

In Clinton County, Santa Fe Oil & Gas Co. No. 5 Robbin, SW SW SE Section 5-1n-3w, was shot with 60 quarts at 952-85 feet and pumped 90 bbls. in 24 hours; Adams Oil & Gas Co. No. 3 Kaelin Estate, NE cor. NW SW SE Section 12-1n-1w, Centralia field, sand at 1,366-70 feet, shot with 10 quarts, pumped 54 bbls.; E. C. Lehman No. 1 Legried, SW NE SE Section 12-1n-1w, sand at 1,387-1,402 feet, pumped 5 bbls. of oil and 10 bbls. of water in 24 hours; W. C. McBride, Inc., No. 3 Allison, SW SE NE Section 12-1n-1w, sand at 1,373-85 feet, shot with 15 quarts, pumped 78 bbls. of oil and 37 bbls. of water in 22 hours; Morris & Solomon No. 1 Irving Ohl, NE NE SE Section 12-1n-1w, sand at 1,382-1,401 feet, shot with 20 quarts, pumped 60 bbls.; Hughes and others No. 1 Watts, SW SE NE Section 13-1n-1w, sand at 1,358-82 feet, pumped 80 bbls.; American Seismograph Co. No. 1 Allen, NW NE NE Section 24-1n-1w, sand at 1,364-80 feet, shot with 5 quarts, pumped 50 bbls.; C. A. Sheppard No. 1 F. Copple, NE NE NE Sec-

(Continued on Page 106)

Texas and Louisiana Gulf

By NEIL WILLIAMS

Deep Horizon in Chacahoula Salt Dome Looks Productive

HOUSTON, Tex., Sept. 5.—The Chacahoula salt dome, northwest Lafourche Parish, coastal Louisiana, was expected to be added to the list of producing fields, following a promising drill-stem test of Sun Oil Co. No. 1 Dibert, Stark & Brown Cypress Co., Section 70-15s-15e. Sand showing oil was topped at 7,240 feet and cored to a total depth of 7,253 feet. On a 15-minute drill-stem test through a quarter-inch choke top and bottom, it tested 30 pounds of pressure, 13 stands of 37 gravity oil and one stand of mud, with no showing of salt water. An electrical coring test was made of the hole and 9⅝-inch casing was being cemented on bottom.

The well is on the east flank of the dome, which was discovered by the Gulf Oil Corp. in 1926. With the exception of one well drilled below 5,000 feet, previous development has been confined to shallow tests on top of the structure.

Shell Petroleum Corp. No. 1 Peters, in Section 73-18s-18e, a promising wildcat on the South Houma prospect, Terrebonne Parish, recovered 15 pounds of pressure and 64 stands of salt water on a drill-stem test at 9,870-80 feet. The well is credited with showings at intervals from 9,739 to 9,793 feet, and a drill-stem test of this section was expected to be made during the week.

Republic Production Co. No. 1 Columbia Land & Timber Co., the discovery oil wells in the Bancroft field, Beauregard Parish, has been recompleted and is flowing an estimated 625 bbls. per day through a quarter-inch choke from perforated casing at 7,320-27 feet. The well was brought in two weeks ago, but began to show approximately 50 per cent salt water.

New Productive Zone

In the Valentine field, Lafourche Parish, Pan American Production Co. No. 18 Harang, Section 8-17s-20e, opened the first production for the 4,600-foot horizon when it flowed pipe line oil from sand at 4,606-19 feet, the total depth. While this sand has been cored in several other wells, no production tests were ever attempted. The company's No. 2-B Community, which opened a deep sand at 9,316-23 feet, is flowing 28 bbls. per hour through a quarter-inch choke, with tubing pressure 1,325 pounds. The well is about one-half mile south of production in Section 58-17s-20e.

Texas Co. has started drilling operations on an important wildcat in northwestern Terrebonne Parish. It is on the Continental Land & Fur Co. lease, 3,309 feet south and 662 feet east of the NW cor. of Section 29-18s-14e. This area was worked by reflection seismograph and is generally known as the Lake DeCade prospect.

East of Abbeville, Vermilion Parish, De Soto Oil Co. is clearing location for No. 1 Richardson in Section 30-12s-4e. The announcement of these two locations makes a total of 22 active wildcat operations throughout the district.

Texas Gulf Coast

In the Texas Gulf Coast area additional development was assured the east side of the Fairbanks field, Harris County, following the completion of Stanolind Oil & Gas Co. No. 1 Fritz Look, 4,000 feet east of production in the S. Lewis Survey. This test was drilled to 7,495 feet and was completed in a new sand in the upper Saline Bayou through perforated casing at 6,947-56 feet. On a 12-hour gauge, through a quarter-inch choke, it flowed 174 bbls. of fluid, of which 5 per cent was brackish water. In view of the fact that the well showed only gas in the 6,800-foot sand (discovery horizon) and gas and salt water in the "Goodykoontz" sand, it is generally believed that it opens a new area for the Fairbanks structure, being separated from the field proper by a faulted condition. It is approximately 4,000 feet south of Union Producing Co. No. 1 Goodykoontz, recently completed as a distillate well in the lower Saline Bayou horizon at 7,200 feet. More information on the potentiality of this area will be obtained by the drilling of Stanolind Oil & Gas Co. No. 1 Schumacher, several hundred feet northeast of No. 1 Look in the J. Doswell Survey.

The southwest limits of the field were defined with the abandonment of Housh & Thompson No. 1 Fisher Estate, T. Hogan Survey, midway between the Satsuma field and the Fairbanks field proper. The hole was quit at 7,703 feet, with no showings of interest reported. On geological markers the well ran normal and found the 6,700-foot Cockfield gas sand, but the lower section shaled up and only a slight gas showing was obtained in the 6,800-foot horizon. The well topped the Discorbis Yegua at 6,694 feet and the Epponides at 6,819 feet.

The Eureka field, Harris County, was extended a short distance to the northeast with the completion of Means & McGehee No. 1-C Laura Lackner, H Reinerman Survey On a 24-hour potential test the well flowed 580 bbls. through a quarter-inch choke. It is producing through perforated casing from sand at 7,697-7,724 feet. Location was made by the same operators for No. 1-D Laura Lackner, 600 feet northeast of No. 1-C Lackner in Section 3.

Magnolia Petroleum Co. No. 3-A West, the discovery well of the West Ranch prospect, Jackson County, flowed 132 bbls. of 25.2 gravity oil in 24 hours through a 9/64-inch choke with tubing pressure 325 pounds and casing pressure 810 pounds. It is flowing from the Frio sand at 5,078-86 feet, the total depth.

Riverbed Prospect

The first test on state leases in the Colorado River bed, west of the Magnet field, Wharton County, is scheduled to be completed as a producer. Gas sand was topped at 5,512 feet, and broken sand showing oil was topped at 5,521 feet and cored to 5,530 feet, total depth. Five and one-half inch casing was cemented at 5,523 feet. The completion of the well is expected to force an offset drilling campaign.

In the Pearland area, Brazoria County, Glenn McCarthy is reported making a test of the Miocene section in No. 1 G. C. Street. The hole is bottomed in the Frio zone at 6,025 feet and has been plugged back to 3,900 feet, preparatory to sidetracking and redrilling to approximately 4,100 feet where side-wall cores are said to have carried a show of oil. This well was drilled as a mystery, and all information on it is subject to correction.

Sun Oil Co. No. 2 Houston Farm Development Co., about 2 miles southeast of the Greens Lake field, Galveston County, perforated casing at 6,965-85 feet, and flowed 500 bbls. of fluid per day, of which 90 per cent was salt water and the balance oil. Tubing pressure was 325 pounds and casing pressure 900 pounds. Several sands are reported to have been logged and additional tests are expected to be made.

The second producer in the deep sand recently opened in the Segno field, Polk County, was apparently assured as Gulf Oil Corp. cemented casing on bottom at 8,123 feet in No. 12 Wing, following a 12-minute drill-stem test at 8,113-21 feet, which tested 125 pounds of pressure, and 1,000 feet of pipe line oil and 90 feet of salt water. The well is located southeast of No. 2 Regan, the discovery well, which found production in the Cook Mountain horizon at 8,161-65 feet. With the producing limits of the 5,300-foot Cockfield sand fairly well defined, operators have turned their attention to the development of the upper Saline and Cook Mountain horizons in the south portion of the field. Humble Oil & Refining Co. No. 9-B Kirby Lumber Co. is coring ahead at 8,149 feet after a drill-stem test at 8,070-8,100 feet tested 495 feet of oil-cut mud and 10 gallons of salt water.

Second Miocene Shows Oil

Production from a second Miocene sand was apparently opened in the Clam Lake field, Jefferson County, by the showing of Shell Petroleum Corp. No. 2 McFaddin, southeast of the discovery well. Production was obtained by perforating the casing at 3,845-55 feet, and the well flowed 58 bbls. of fluid for several hours before it went dead. The sand section is reported to be very fine and the company is having trouble in making the well flow due to sand clogging the screen. This is the second well drilled on the structure, which has proven a deep-seated salt dome when rock salt was topped at 8,156 feet. Several attempts to complete the well at 5,500 feet failed due to bad sand condition.

Northeast of the Palacios field, Matagorda County Glenn McCarthy No. 1 Nancy Moffett, Susan Perkins Survey, is drilling in sandy lime at 8,251 feet. The Round Marginulina was topped at 6,972 feet, and the Flat Marginulina at 7,004 feet.

On the northwest flank of the Orange field, Orange County, Red Bank Oil Co. was preparing to test a new sand in No. 7 Michel. Casing was cemented on bottom at 5,576 feet, after oil and gas sands were logged at intervals from 5,535 feet to the total depth. The Marginulina sand was topped at 5,344 feet.

Locations for two wildcats were reported. South of Anahuac, Chambers County, Salt Dome Oil Corp. staked location for No. 1 Dolce Ogden in the Evan Douthit Survey, Abstract 329. It is a projected 8,500-foot test. Northwest of the town of Wharton, Wharton County, Western Gulf Petroleum Co. is moving in material for No. 1 C. Q. Rust, a 7,000-foot test in the A. Jackson league.

COMPLETED WELLS

Brazoria County

Hastings field: M. G. Hanksbro No. 1 Blummer and others, 6,119 feet, 332 bbls., ¼-inch choke. Humble Oil & Refining Co. No. 2 Cecil Brown, sand 6,100-14 feet, 495 bbls., ¼-inch choke. Humble Oil & Refining Co. No. 9 J. E. Alexander, 6,050 feet, 27 bbls. per hour, ¼-inch choke. Stanolind Oil & Gas Co. No. 28 Steve Paul, perforated casing 6,060-83 feet, 602 bbls., ¼-inch choke. Stanolind Oil & Gas Co. No. 8 J. W. Surface, perforated casing 6,046-78 feet, 489 bbls., ¼-inch choke. Lockridge field: Shell Petroleum Corp. No. 5-B Ramsey State Farm, 6,363 feet, 312 bbls., ¼-inch choke. Old Ocean field: Harrison & Abercrombie No. 1 Larsen, 10,159 feet, plugged back 10,095 feet, 300 bbls., various chokes.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 22 Johnson, sand 7,044-85 feet, 549 bbls., ¼-inch choke. Humble Oil & Refining Co. No. 18 Gripon, 7,080 feet, 28 bbls. per hour, ¼-inch choke.

Fort Bend County

Thompson field: Gulf Oil Corp. and Humble Oil & Refining Co. No. 14 Booth, 3,175 feet, 251 bbls., ⅛-inch choke.

Galveston County

Dickinson field: Atlantic Refining Co. No. 6 W. G. Jones, 8,135 feet, 483 bbls., ¼-inch choke. Hitchcock field: N. W. Hunter No. 1 J. D. Hughes, 6,020 feet, abandoned.

Harris County

Eureka field: Tide Water Associated Oil Co. No. 1-B Laura Lackner, perforated casing 7,688-98 feet, 567 bbls., ¼-inch choke. Means & McGehee No. 1-C Lackner, perforated casing 7,697-7,724 feet, 580 bbls., ¼-inch choke.

Fairbanks field: Mortex Oil Co. No. 1 W. R. Reid, perforated casing 6,810-47 feet, 676 bbls., ¼-inch choke. Windsor Oil Co. No. 5 H. E. Ley, perforated casing 6,834-39 feet, 715 bbls., ¼-inch choke. Showers & Moncrief No. 1-B Reid, perforated casing 6,843-46 feet, 751 bbls., ¼-inch choke. Windsor Oil Co. No. 4 O. E. Parker, sand 6,825-37 feet, 694 bbls., ¼-inch choke. Friendswood field: Humble Oil & Refining Co. No. 21 L. S. Beamer, sand 5,694-6,048 feet, 25 bbls. per hour, ¼-nch choke. Humble Oil & Refining Co. No. 12 E. A. Grey, sand 5,938-6,040 feet, 25 bbls., ¼-inch choke. Humble Oil & Refining Co. No. 11 E. A. Grey, sand 5,938-6,040 feet, 25 bbls. per hour, ¼-inch choke. Tomball field: Humble Oil & Refining Co. No. 4 Weindorff, perforated casing 5,527-32 feet, dry gas well.

Hardin County

Silsbee field: Republic Production Co.-Houston Oil Co. No. 1 J. C. Reeves, sand 6,906-13 feet, 649 bbls., ¼-inch choke.

Jefferson County

Amelia field: Stanolind Oil & Gas Co. No. 6 Keith-Dowlen, sand 5,361-85 feet, 469 bbls., ¼-inch choke. North Cheek field: Magnolia Petroleum Co. No. 6 Phelan, sand 8,304-19 feet, 187 bbls., ¼-inch choke.

Liberty County

Hardin field: Arkansas Fuel Oil Co. No. 3 W. J. Green, sand 7,625-62 feet, 536 bbls., ¼-inch choke. Humble Oil & Refining Co. No. 1 M. H. Johnson, 7,700 feet, 33 bbls. swabbing.

Matagorda County

McCrosky field: Pierce Estate No. 4-A Pierce, 6,626 feet, 103 bbls., 12 hours, ⅛-inch choke.

Polk County

Segno field: Gulf Oil Corp. No. 13 S. F. Wing, perforated casing 6,551-61 feet, 74 bbls. distillate, ¼-inch choke.

Wharton County

Spanish Camp field: Albert Plummer No. 1 Corbett, 6,100 feet, plugged back 2,930 feet, completed as dry gas well. Withers field: Texas Co. No. 50-C Pierce Estate, sand 5,549-57 feet, 71 bbls., ⅛-inch choke.

California Fields

(Continued from Page 84)

The company, however, was not entirely satisfied and started preparations to drill ahead. A 7-inch string was cemented at 8,266 feet. Production of this field has been held well in hand by operators, all of whom are in favor of curtailment, and indications are that all operators will make an additional reduction in production if required during the winter months. There are six strings of tools in operation in the North Belridge field and it seems likely that the present rate will be maintained for several months.

Montebello

Drilling operations are showing a consistent increase in the west end of the Montebello field, where operators are engaged in deeper drilling involving exploitation of the fifth zone of lower Pliocene age and the sixth zone of upper Miocene age. West Montebello Oil Co. completed its No. 1 flowing 960 bbls. of 35.2-gravity oil per day from 6,268 feet. St. Helens Petroleum Co., discoverer of deeper production in the west end of the field, has killed No. 28 Monterey, which has been flowing through tester for several weeks, and will drill it into the sixth zone. None of the wells on adjacent property are producing from the fifth zone, and the company decided to produce the sixth zone in order to prevent unnecessary drainage. In addition to existing work St. Helens is contemplating a deep test to determine whether additional productive zones exist below the productive sixth zone. Union Oil Co. has just started swabbing No. 2 Wilcox in the eastern end of the western extension. If this well results in commercial production Union will move across the street and start a well on the Calkins lease, which will make it necessary for St. Helens Petroleum Co. and the Texas Co. to start other offsets. V-8 Oil Co. is repairing the damage resulting from the fire that halted work two weeks ago and expects to have the well back on production within 10 days.

Los Angeles Basin

Union Oil Co. failed to complete No. 62 Callender in the deep zone in the Dominguez field at 8,359 feet, but has successfully finished it flowing 320 bbls. of 35.9-gravity oil per day from the upper zone after plugging back to 5,109 feet. Shell Oil Co. is working on what appears to be a rather important deep test in this field as it will substantially increase the productive limits of the lower zone if it results in commercial production. The well in question is No. 95 Reyes which is bottomed at 9,110 feet after having been carried down to 9,180 feet and then plugged back. This well cored an excellent body of oil sand and preparations are under way to make an early production test. Some difficulty has been experienced with water but the company hopes to overcome this problem. As a result of this showing, Shell has leased acreage southeast of the Dominguez field as No. 95 Reyes is located in the extreme southeastern end of the field. Union Oil Co. is making preparations to start a deep test in the extreme western end of the field in an area where a number of upper zone wells have been finished up to the present. One new well and one recompletion were chalked up in the Long Beach field during the current week but neither registered substantial production. Apex Petroleum Corp. No. 10 Signal, a new well was finished pumping 180 bbls. of 22.6-gravity oil cutting 12 per cent daily from 3,058 feet and Italo Petroleum Co. recompleted No. 2 Kading pumping 158 bbls. of 21.9-gravity oil cutting 25 per cent daily with bottom of the hole at 3,560 feet.

Coastal Area

Shell Oil Co. completed an excellent new well in the Capitan field of Santa Barbara County late in the week when No. 1-28 Covarrubias was finished flowing 670 bbls. of 19.2-gravity oil daily from 1,675 feet. In the Rincon field, Chansior Canfield Midway Oil Co. completed No. 7-C Hobson flowing 413 bbls. of 22.4-gravity oil and 260,000 feet of natural gas per day from 3,561 feet. This new well was carried down to 3,600 feet and then plugged back to the completion depth because of bottom water. The hole was finished with a solid string of 9-inch casing landed at 3,490

(Continued on Page 106)

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Oklahoma Operations

By
DAL DALRYMPLE

Extend Ramsey Northward; New Producer in Fox Pool

Completion of the thirteenth big producer in the Ramsey pool, southwest of Stillwater in Payne County, Oklahoma, was followed by announcement of three new tests for the highly productive Wilcox sand pool. The newest producer is the Mid-Continent Petroleum Corp. and others No. 5 Ramsey, SW NW NW Section 18-18-2e, which extended the pool one location northward. It found Wilcox sand at 4,760-89 feet, total depth, flowed 380 bbls. of oil the first hour, 298 bbls. the next hour and was rated potentially at 8,148 bbls. On that rating it is the second smallest producer in the pool, potentials of the 13 completed wells ranging from 7,404 bbls. to 15,240 bbls.

The new locations at Ramsey are Mid-Continent Petroleum Corp. and others No. 1 Gray, NE SW SW Section 18-18-2e; No. 3 Brandon, SE NE NE Section 13-18-1e, and No. 5 Columbia, SW NE SW Section 18-18-2e.

A fifth producer was near completion in the deep zone of the Fox field, Carter County. Gulf Oil Corp. No. 2 McClure, C SE NE Section 28-2s-3w, flowed 843 bbls. of oil gross and 237 bbls. of acid and salt water in initial 14-hour test, later flowing 135 bbls. of oil and 22 bbls. of water through tubing in 3 hours and 45 minutes, and was shut in for tankage. Water was declining, and operators were hopeful of obtaining a shutoff. Gas gauged 1,299,000 feet daily. Production was from oolitic lime at 8,175 feet, total depth.

Wildcat Completions

J. E. Kendall No. 1-A State, SW cor. Section 13-23-3w, Garfield County wildcat, has gas estimated at 2,000,000 feet at 1,010-35 feet, but salt water intruded at the rate of 7 bbls. an hour at 1,035-45 feet and it was dry and abandoned at 1,096 feet, total depth.

Denver Producing & Refining Co. and others No. 1 Horton (McQuain), NE NW NE Section 22-19-1e, wildcat between the Ramsey and Orlando pools in Payne County, had first Wilcox sand at 4,953-90 feet, second sand at 5,008 feet and was dry and abandoned at 5,028 feet, total depth, in hard, white and salty sand.

Amerada Petroleum Corp. and others No. 1 Conard, NE NW SW Section 33-10-10, wildcat in Okfuskee County, topped Wilcox sand at 4,028 feet, recovered hard, dry sand in cores at 4,066-68 feet, total depth, and was abandoned.

M. J. Mitchell No. 1 Westfall, SE cor. Section 33-2n-4w, wildcat near Doyle in Stephens County, had spudded with machine. It was to be a 4,500-foot rotary tool test.

R. L. Emerson No. 1 Hancock, SE SE NE Section 26-6-15w, wildcat near Sedan in Kiowa County, was drilling with machine below 55 feet.

British American Oil Producing Co. No. 1 Markwell, SE NE NE Section 26-12-4e, wildcat in the Meeker area, southern Lincoln County, was nearing a decision. Operators were coring in Simpson dolomite below 5,405 feet, looking for Wilcox sand.

Pottawatomie County

Robertson and others No. 1 Johnson, NW NE SW Section 29-7-5, St. Louis field, Pottawatomie County, found pay at 4,048 feet, total depth 4,116 feet, and pumped 390 bbls. of oil in 24 hours.

Magnolia Petroleum Co. No. 2-A Tull-Fyke, NE cor. Section 29-7-5, pumped 40 bbls. of oil and 10 bbls. of water daily from pay at 2,825 feet, total depth 2,862 feet.

Conley Drilling Co. No. 4 Vinson, NW NE NE Section 13-7-4, found pay at 3,928 feet, was bottomed at 4,075 feet, plugged back to 4,062 feet and pumped 50 bbls. of oil daily.

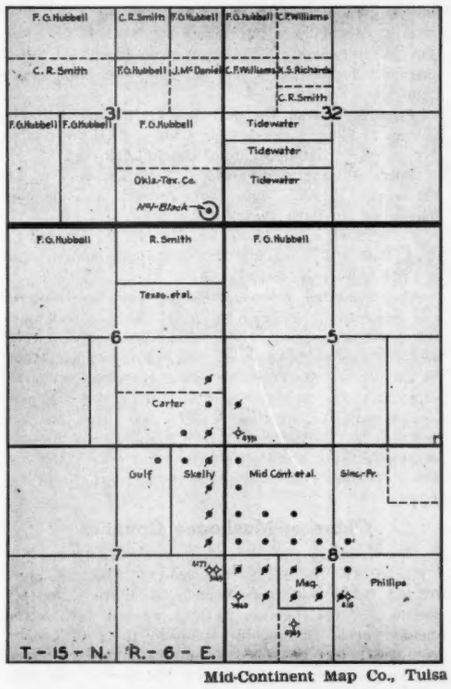
E. W. Jones No. 1 School Land, NE NW NE Section 36-7-4, had initial yield of 405 bbls. of oil daily from pay topped at 4,272 feet, total depth 4,282 feet.

Four old St. Louis wells were reconditioned and recompleted, as follows: Western Oil Co. No. 1 McGee, NE NE SE Section 23-7-4, plugged back and shot at 3,050-60 feet, pumped 10 bbls. of 40-gravity oil and 2 bbls. of water daily. Indian States Oil Co. No. 1 Brandenburg, NE SW NW Section 21-7-4, plugged back from 3,980 feet to 3,657 feet and shot but was dry and abandoned. Joe Nuckolls No. 1 Cardwell, SW SW NW Section 15-7-4, plugged back from 4,225 feet to 3,610 feet and ripped casing, but was dry and abandoned. Atlantic Refining Co. No. 1 Bass, SW SW SE Section 9-7-4, plugged back from 3,963 feet to 3,726 feet, and pumped 4 bbls. of oil daily.

Two new St. Louis tests were reported. Denver Producing & Refining Co. No. 2 Villines, NE SW SW Section 36-7-4, was a location. Sinclair Prairie Oil Co. No. 6 Nadash, NE NW SW Section 29-7-5, was a location.

Seminole County

Sinclair Prairie Oil Co. No. 3 Tennison, NE SE NW Section 22-6-6, Traugh area, Seminole County, pumped



Mid-Continent Map Co., Tulsa

Ok-Tex Drilling Co. No. 1 Black, Section 31-16-6, Lincoln County, may extend the old Kendrick pool northward

50 bbls. of oil and 50 bbls. of water daily from pay topped at 2,295 feet, total depth 2,376 feet.

Wood Oil Co. No. 2 Cudjo, SE SE NE Section 2-8-6, Seminole City area, topped pay at 4,165 feet, was bottomed at 4,177 feet and pumped 266 bbls. of oil in 24 hours.

W. B. Pine No. 7 Williams, SW NW NE Section 22-6-6, found pay at 3,545 feet, total depth 3,614 feet, and pumped 30 bbls. of oil daily.

Same operator's No. 7-A Williams, SW NW NE Section 22-6-6, topped pay at 2,327 feet, was bottomed at 2,336 feet, and pumped 28 bbls. of oil in 24 hours.

Pine No. 13 Cheparney, NW SE SW Section 12-5-7, Allen district, was completed for 25 bbls. of oil daily from pay topped a 4,330 feet, total depth 4,335 feet.

New work in Seminole County: Texas Co. No. 5 Jefferson, SE NE NE Section 26-5-7, Allen area, building rig; Russell B. Patterson No. 1 Konawa City Park, NW SE NW Section 26-6-5, set surface casing; Traugh and others No. 1 Shirley, SW NW SE Section 27-6-5, West Konawa area, drilling below 2,192 feet; Francis Oil & Gas Co. No. 3 Lewis, NW SE SE Section 32-7-6, Dora pool, building rig; Wood Oil Co. No. 2 Tiger, NW NE SE Section 2-8-6, Bowlegs sector, location.

Pontotoc County

W. B. Osborn No. 1-C King, NE NE SE Section 32-5-8, Allen field, Pontotoc County, was completed as a 42-bbl. pumper at 2,565 feet, total depth.

Delaney and others No. 1-A Butler, NW NE NE Section 30-5-8, was dry and abandoned at 2,849 feet, total depth.

Superior Oil Co. No. 2 Indian Royalty, NW NE NW Section 36-5-4, Bebee field, found pay at 2,438 feet, total depth 2,621 feet, and pumped 20 bbls. of oil in 24 hours.

H. L. Blackstock No. 2-B Kirby, NW NE SE Section 22-2-7, Fitts district, was dry and abandoned at 1,317 feet, total depth.

H. D. Amos and others No. 1 Braly, NW SW NE Section 21-5-5, Bebee field, was building rig. Osborn & Minton No. 1 King A, SE SW SE Section 32-5-8, Allen field, was drilling below 2,690 feet. Halko & Myers Drilling Co. No. 2 Busby, SW SW NW Section 33-5-8, was a rig.

Lincoln County

Wilcox Oil & Gas Co. No. 6 DeLozier, SE NW NW Section 15-14-6, Sac and Fox pool, Lincoln County, topped Prue sand at 2,920 feet, total depth 3,021 feet, and flowed 98 bbls. of oil in 24 hours, with gas estimated at 1,500,000 feet.

Same company's No. 8 DeLozier, NW SW SW Section 10-14-6, had pay at 3,053 feet, total depth 3,150 feet, and flowed 70 bbls. of oil daily, with 1,000,000 feet of gas.

Sinclair Prairie Oil Co. No. 5 Buckles B, NW SW SE Section 15-14-6, flowed 70 bbls. of oil daily from Prue sand found at 2,952 feet, total depth 3,034 feet. Gas gauged 1,000,000 feet.

Mudge Oil Co. No. 1 Potter, SW SW NE Section 10-14-6, found pay at 3,032 feet, was bottomed at 3,033 feet and flowed 12 bbls. of oil daily.

Helmerich & Payne No. 7 Fitch, NW SE NE Section 15-14-6, had Prue sand at 2,912 feet, total depth 3,005 feet, was shot and flowed 120 bbls. of oil in 24 hours, with 1,500,000 feet of gas.

New operations in Lincoln County: Wilcox Oil & Gas Co. No. 1 Terry A, NE SW SE Section 9-14-6, rigging up rotary; same company's No. 4 Fitch, NE cor. Section 15-14-6, rigging up rotary; Wilcox Oil & Gas Co. No. 9 DeLozier, SE NE NW Section 15-14-6, drilling below 1,004 feet; same company's No. 10 DeLozier, NE SW SW Section 10-14-6, had Prue sand at 2,961 feet, total depth 2,968 feet, set casing at 2,955 feet, drilling plug; Helmerich & Payne No. 8 Fitch, NE SE NE Section 15-14-6, drilling below 2,803 feet.

Pawnee County

Peter Adamson, Jr., No. 12 Thomas, NW cor. Section 25-21-8, Pawnee County, was dry and abandoned at 1,171 feet, total depth.

Selby Oil & Gas Co. No. 2 Peterman, NW SW NW Section 24-20-9, Keystone area, was dry and abandoned at 2,131 feet, total depth.

Coronado Oil & Gas Co. No. 21 School Land, NW NW SW Section 16-21-8, an old Cleveland sand producer being deepened from 1,796 feet, was drilling below 2,035 feet. M. P. Thomas and others No. 2 Zacka-

foose, SE SW NE NE Section 23-20-9, was digging cellar and pits.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending September 3 and for the preceding week was as follows:

	Barrels	
	Aug. 27	Sept. 3
Allen	5,100	5,950
Billings	5,200	5,100
Burbank	7,975	7,575
South Burbank	11,250	11,750
Balance Osage	18,500	18,525
Blackwell district	4,525	4,750
Bristow-Slick	6,975	6,850
Chandler	1,950	1,775
Crescent	4,000	4,050
Cromwell	3,175	3,575
Cushing-Shamrock	10,550	9,825
Duncan district	3,850	4,275
Edmond	4,450	5,050
Fish	3,150	3,275
Fitts	36,900	40,725
Jesse	2,300	2,650
Graham-Fox	3,950	3,925
Gray	850	750
Healdton	8,175	8,125
Hewitt	3,550	3,475
Keokuk	3,600	4,275
Konawa	1,325	1,000
Lucien	8,500	9,375
Moore	4,025	4,580
Oklahoma City	95,925	96,775
Olympic	5,300	6,225
Ramsey	2,075	1,650
Sasakwa	1,325	1,350
Sholem-Alechem	2,575	2,350
Seminole district:		
Bowlegs	8,125	7,975
Carr City	2,950	2,825
Dora	4,100	4,275
Earlsboro	4,850	4,775
South Earlsboro	425	375
East Earlsboro	4,650	4,625
Little River	6,350	6,125
East Little River	950	975
Maud	650	675
Mission	1,425	1,375
Seminole	7,175	6,850
East Seminole	1,625	1,650
Searight	2,675	2,650
Total Seminole	45,950	45,050
St. Louis-Pearson	21,725	21,750
Tatums	2,875	3,100
Tonkawa-Garber-Thomas	4,550	4,450
Wewoka	2,150	2,125
Yale-Jennings	4,050	3,750
Other pools	80,075	77,220
Total Oklahoma	432,400	437,050

Payne County

Mid-Continent Petroleum Corp. and associates No. 4 Columbia, SE NW SW Section 18-18-2, Ramsey pool, Payne County, was completed for potential of 13,429 bbls. of oil, with 7,525,000 feet of gas. It found Wilcox sand at 4,745 feet, was bottomed at 4,785 feet, and flowed 2,238 bbls. of oil in four hours.

Deep Rock Oil Corp. No. 3 Little Chief, NE NW NE Section 4-18-5, an old well in the West Norfolk area, was plugged back from 3,600 feet to 3,465 feet and pumped 60 bbls. of oil and 8 bbls. of water daily from pay topped at 3,431 feet.

Oklahoma County

H. R. Hollenbach No. 1 Sinopoula, SW SW NW Section 15-12-3w, Oklahoma City field, Oklahoma County, had initial flowing production of 720 bbls. of oil daily and was completed at 6,436 feet, total depth.

Garfield County

Sinclair Prairie Oil Co. No. 30 Walker, NW SE SE Section 24-22-4w, Garber pool, Garfield County, was completed at 1,452 feet, total depth, pumping 18 bbls. of 52-gravity oil daily.

Osage-Kay Counties

Devonian Oil Co. and Norbal Oil Co. No. 1 Osage, NW NW SE Section 8-24-9, Osage County, was dry and abandoned at 2,373 feet, total depth.

C. B. Houston No. 5 Osage, SW cor. Section 28-23-9, was a location.

In Kay County, Ohio Oil Co. and others No. 2 Wilbur, NE NW NW Section 21-28-1w, was a location.

Hughes County

Marbett Oil Co. No. 1 Breeding, NE SW NE Section 12-7-8, Holdenville area, Hughes County, found top pay at 1,084 feet, was bottomed at 1,097 feet, and pumped 33 bbls. of oil daily.

Creek County

Wood Oil Co. No. 1 Gabriel, NW NE SW Section 24-19-7, flowed 50 bbls. of oil daily from pay topped at 2,628 feet, total depth 2,668 feet.

Sinclair Prairie Oil Co. No. 28 Jones, C E half SE NW Section 3-17-7, Cushing field, entered pay at 2,450 feet, total depth 2,575 feet, plugged back to 2,570 feet, and pumped 30 bbls. of oil and 30 bbls. of water in 22 hours.

McAdams & Thornton No. 1 McCannon, NE NE SE Section 36-17-9, Creek County, entered pay sand at 2,712 feet, total depth 2,713 feet, and flowed 170 bbls. of oil in 24 hours.

L. B. Jackson No. 1-A Wilson, NE NW NE Section 34-18-8, Olive pool, had pay at 2,606 feet, total depth 2,639 feet, and pumped 25 bbls. of oil daily.

Klingensmith Oil Co. No. 1 Burgess, NW NW NE Section 36-18-10, Kellyville district, entered pay at 2,118 feet, was bottomed at 2,135 feet, and pumped 20 bbls. of oil daily.

Burke-Greis Oil Co. No. 1-A Hughes, SE NW SE Section 20-18-10, was dry and abandoned at 3,060 feet, total depth.

Jordan & Sessions No. 1 Davis, NW cor. Section 35-14-10, East Tuskegee area, was dry and abandoned at 3,360 feet, total depth.

Chapman & McFarland No. 3 Brooks, NE SW SW Section 36-15-10, Slick area, had Viola lime pay at 3,047 feet, total depth 3,104 feet in Wilcox sand, and pumped 50 bbls. of oil daily, producing from both formations.

New work in Creek County: Sinclair Prairie Oil Co. No. 8 Oates, CEL W half NE Section 14-19-9, Mannford area, swabbed 20 bbls. of oil daily at 1,244-83 feet, and was cleaning out; L. B. Jackson No. 8 Wilson, C NW NE Section 34-18-8, an old well in the Olive area, pulling casing to deepen; Nabob Oil Co. No. 1 Bowden, NE NW NE Section 9-17-8, an old well being deepened from 1,462 feet, was drilling below 2,375 feet; Link Oil Co. No. 3 Mackey, NW SW NW Section 33-18-7, an old well in the Cushing field, was deepened from 1,410 feet to 1,510 feet, and was preparing to underream casing.

Okmulgee County

M. E. Craig No. 2-A Milner, Section 25-14-14, Okmulgee County, found pay at 1,073 feet, total depth 1,093 feet, and pumped 15 bbls. of oil daily.

H. C. Archer No. 1-A Champion, NW SW NW Section 28-14-14, Bald Hill district, was completed for 3 bbls. of oil daily from pay at 1,224 feet, total depth 1,236 feet.

Price & Warner No. 4-A Warner, CWL E half NE Section 21-14-14, was good for 4 bbls. of oil daily from pay found at 1,105 feet, total depth 1,132 feet.

James Wise and others No. 2 McKinney, SW SE NE Section 3-12-12, Tiger Flats district, was dry and abandoned at 1,491 feet, total depth.

E. W. Dodge No. 13 Payne, SW NE SE Section 17-15-14, Bald Hill area, was dry and abandoned in sand at 1,070-1,138 feet, total depth.

The following new activity in Okmulgee County was reported: J. Penrod No. 2 Barnett, SE cor. Section 19-12-14, location; J. B. Rebold No. 1 Jones, CNL NW NW Section 24-13-12, drilling below 185 feet; Link Oil Co. No. 16 McCrory, NE SW NE Section 28-13-14, location; C. D. Burns No. 1-A Highes, NE NE SW Section 35-14-14, drilling below 500 feet; Vierson Brothers No. 16 Denver Starr Allotment, NW SE SW Section 30-15-14, spudded; Horner and others No. 1-A Wills, NE NE NW Section 22-16-12, rigging up machine.

Okfuskee-Muskogee Counties

New work in Okfuskee County: O. H. Grimes No. 1 Harjo, SW SE SE Section 26-11-9, Okemah area, drilling below 740 feet; Norman & Parnell No. 1-A Boehm, SW cor. Section 24-12-11, an old well in the Sheldon area, rigging up standard tools to deepen from 2,877 feet to Wilcox sand; Carmichael Drilling Co. No. 8 Caney, C S half NE NE Section 26-12-11, spudded.

In Muskogee County, Metzgar and others No. 2 Zount, NE NE SE Section 20-15-18, was drilling below 240 feet.

Grady-Stephens Counties

T. H. McCasland No. 3 Mecklenburger, SE cor. Section 6-3-5w, Knox area, Grady County, found pay at 1,450 feet, total depth 1,495 feet, and pumped 20 bbls. of oil daily.

Glenn Johnson No. 1-A Massey, SW cor. Section 11-3s-5w, Loco area, Stephens County, was dry and abandoned at 2,065 feet, total depth.

George L. Pace and others No. 20 Allen, SE SW NE NE Section 3-2s-8w, Empire pool, Stephens County, was a derrick.

Caddo County

Willard L. Miller No. 2-A Garner, SW NW SW Section 26-6-10w, west end of Cement field, Caddo County, an old well, was plugging back from 4,462 feet to 4,050 feet, and pumped 115 bbls. of oil daily, cutting 40 per cent water.

Magnolia Petroleum Co. No. 8 Lackey, SE NW NW Section 11-5-9w, had pay at 3,995 feet, total depth 4,047 feet, and pumped 16 bbls. of oil daily.

Same company's No. 7 Sames, SW SW NE Section 35-6-10w, was dry and abandoned at 3,865 feet, total depth.

Ohio Oil Co. No. 6 Lackey, Account 3, SE SE NW Section 11-5-9w, was a derrick.

Other New Work

In Murray County, Comet Drilling Co. No. 1 Torby, C NW NE Section 17-1n-2e, in gas area, had dug pits.

In Carter County, Shell Petroleum Corp. No. 24 Horton, NW NE NW SE Section 6-4s-3w, Healdton pool, was drilling below 197 feet.

In Tillman County, Indian Territory Illuminating Oil Co. No. 1 Copeland, NE NE SW Section 1-3s-19w, Frederick pool, was a location.

East Texas Fields

(Continued from Page 82)

Sexton, 3,662-3,714 feet, 55 bbls. R. E. Massingale No. 3 T. H. Gill, 3,623-24 feet, 50 bbls.

Rusk County—Joiner Area

Hollingsworth Drilling No. 1 I.O.O.F. Lodge, 3,756-3,803 feet, 40 bbls. Humble Oil & Refining Co. No. 13 C. W. Wilson, 3,578-3,633 feet, 60 bbls. Hunt Oil Co. No. B-17 Bradford, 3,618-68 feet, 5 bbls.; No. C-39 R. W. Fair, 3,599-3,602 feet, 85 bbls. Ohio Oil Co. No. 91 M. M. Cross, 3,624-3,725 feet, 48 bbls.; No. 19 H. L. Griffin, 3,675-3,715 feet, 20 bbls. Sayre Oil Co. No. 9 J. Cansler, 3,755-58 feet, 60 bbls. E. R. Smith No. 3 Deason, 3,641-49 feet, 40 bbls. Sun Oil Co. No. 6 L. Cooper, 3,622-35 feet, 40 bbls. Sutton-Hawkins No. 9 R. J. Vinson, 3,579-88 feet, 3 bbls. Vaughn Production Co. No. 12-A W. O. Alford, 3,756-57 feet, 10 bbls.

Smith County—Joiner Area

Lane Drilling Co. No. 1 A. T. Tyiska, 3,795-3,896 feet, 38 bbls.

NORTH TEXAS COMPLETIONS

Archer County

L. T. Burns No. 2 K. Ahrens, 3,932-3,971 feet, 600 bbls.; No. 1 Joseph Hemmi, temporarily abandoned location. Fain-McGaha Oil Corp. No. 1 L. F. Wilson G, 4,720-90 feet, 280 bbls., wildcat. Gem Oil Co. No. 2 W. P. Ferguson, 3,820-3,874 feet, 1,016 bbls. H. F. Harmel No. 1 fee, 1,500 feet, dry. Jack Latson No. 1 E. Beardon, 1,093 feet, dry. Shappell Oil Co. No. 7 G. Bell, 1,017-22 feet, 136 bbls.; No. 8 Grace Bell, 1,002-1,010 feet, 124 bbls.; No. 9 Grace Bell, 987-1,000 feet, 142 bbls. Underwood & Campbell No. 24 R. Campbell, 971-76 feet, 20 bbls.; No. 25 R. Campbell, 984-1,017 feet, 45 bbls.; No. 26 R. Campbell, 987-1,016½ feet, 24 bbls.

Baylor County

J. Rogers No. 1 E. F. Elam, 1,810 feet, dry.

Clay County

L. T. Burns No. 1 Mrs. Pearline Lyles, 5,606 feet, dry. Jo-Ellen Oil Co. No. 1 State of Texas, 1,073-1,105 feet, 265 bbls. Metzner & Burns No. 8 L. Thornberry A, 1,230 feet, dry. L. W. Stanford No. 1 J. W. Culbertson, 1,402 feet, dry. Wood Petroleum Co. No. 1 I. H. Kempner, 2,380 feet, dry.

Cooke County

L. Glasscock No. 1 Inglish, 2,580 feet, dry. Mudge Oil Co. No. 5 G. C. Clayton, 970-1,024 feet, 15 bbls. W. S. Temples No. 1 J. W. Mount, 1,820 feet, dry. Texas Co. No. 4 M. Kessler, 1,317-40 feet, 20 bbls.; No. 12 J. Walterscheid, 704-38 feet, 21 bbls. Trumter Oil Co. No. 2 A. Reiter, 1,784 feet, dry.

Hardeman County

Hillsboro Oil Co. No. 1 W. I. Thomas, temporarily abandoned location.

Jack County

Big Six Oil Co. No. 6 E. F. Smith, abandoned location. Champlin & Bass, Inc., No. 1 C. P. Gahagan, 3,171-3,200 feet, 287 bbls.; No. 3 Mantooth, 3,222-63 feet, 334 bbls. Cockburn Oil Co. No. 4 S. M. Mantooth, 3,180-3,235 feet, 241 bbls. Danciger Oil & Refining Co. No. 1 T. E.

(Continued on Page 106)

Northern Basin Counties in Lead in Development Work

By D. H. STORMONT

FORT WORTH, Tex., Sept. 5.—Several new locations, both wildcat and pool outposts, featured the development in West Texas over the past week while a possible extension to Haskell County's Pardue pool marked the activity in West Central Texas.

North Basin Area

Hockley County again led the development in the North Basin area with a new outpost to the recently expanded Slaughter pool. The Texas Co. located No. 1 Mallet Lands, in Labor 1-52, Scurry County School Lands Survey, about 2¼ miles northwest of the area's discovery well. Official gauge of 253 bbls. of oil in 24 hours has been given the Stanolind Oil & Gas Co. No. 2 Slaughter, north offset to the most eastern producer in the pool. Gulf Oil Corp. No. 2 Mallet Lands, 2½-mile northeast extensioner, is swabbing at the rate of about 55 bbls. of oil daily. Operators are preparing to plug back a few feet and shoot the pay section before the official gauge is taken.

In Yoakum County the Denver pool received two outpost locations over the past week, one on the west and the other on the east side of the field. Continental Oil Co. staked No. 1 Sue Stevens in Section 895, an east offset to the company's recent mile and half extension to the pool, No. 1 Dowell, which gauged 623 bbls. per day. Honolulu Oil Corp. made a location for No. 1 R. M. Kendrick, in Section 825, mile and a half northeast of the most eastern producer in the field. The location is 1½ miles northeast of the Shell Petroleum Corp. No. 1-D Baumgart, 343-bbl. producer, which extended the area three-quarters of a mile to the northeast.

Central and South Basin Area

Ector County led the development in the southern basin area with a new outpost to the Harper pool, and the development of sulfur water in an outpost to the Moss pool. L. H. Wentz, one of the most active operators in the Harper pool, staked No. 8 Paul Moss, Section 28, Block 44, T.&P. Survey, the most western test in the entire pool. South of the new location and in the Moss area, about midway between the Harper and the Pennwell pools, Sinclair Prairie Oil Co. No. 2-B Paul Moss is shut down awaiting orders after encountering sulfur water at 4,162-69 feet. The well had found free oil at 3,965-75 feet. It is expected the hole will be plugged back for completion in the higher pay.

Andrews County received a new wildcat location when the Texas Co. staked No. 1-H University, Section 4, Block 14, University lands, one and one-half miles northeast of the Gulf Oil Corp. No. 1-G University, failure at 4,518 feet and approximately 3 miles south of the Walter Donnelly No. 1 University, which was dry and abandoned at 4,703 feet. Both the Gulf and the Donnelly tests found several oil showings.

In the South Basin area, Upton County received a new wildcat location when White & Wilson staked No. 1 Webb about 3½ miles southeast of the Gulf-McElroy pool and in Section 176, Block E, C.C.S.D.&R.G.N.G. Survey. Approximately 1 mile south of the McCamey pool, W. H. Burleson spudded No. 1 R. E. Long, Section 1, R.T. Survey.

WEST CENTRAL TEXAS

In Haskell County the Pardue pool seemed assured of its first major extension in several weeks when Texas Pacific Coal & Oil Co. No. 1 Livengood, half mile northeast of the discovery well, filled at the rate of about 75 to 100 bbls. of oil per day after drilling plug from casing cemented at 2,802 feet. Located in Section 8, Block 1, H.&T.C. Survey, the outpost will be acidized before production gauge is taken. Also in Haskell County, Indian States Oil Co. No. 1 Jones, wildcat test 3 miles northwest of Rule, is coring below 3,853 feet in broken sand and lime with slight oil shows after passing up shows from 3,830-33 feet.

Production northeast of Jacksboro, in Jack County, will be sought in a wildcat staked by the General American Oil Co. in the Ben Gunter lands. Operators have contracted the test to 3,200 feet, seeking pay from the 3,000-foot level found 20 miles to the west in the Bryson pool.

Jones County received a new wildcat location when Brown Eagle Oil Co. of Abilene and Charles J. Kleiner announced location for No. 1 Sullivan Heirs, 4 miles east of Hawley in the southern part of the county. It is in the S. Andrews Survey 191, and contracted to go 2,300 feet. Also in Jones County a new wildcat test a mile east of the Avoca pool has been spudded by Ungren & Frazier as their No. 1 J. M. Griffin Estate, in Section 188, B.B.B.&C. Survey. Contract depth is 3,400 feet.

Nolan County was given a wildcat test when Union Oil Co. started moving in material for No. 1 R. M. Simmons, 5½ miles southeast of Sweetwater. Location is in Section 57, Block 21, T.&P. Survey, and the contract calls for a 5,100-foot test. It is 2 miles east of the Ajax Drilling Co. No. 1 Withers, now shut down at 4,406 feet.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Brown County

Gilcrease Oil Co. No. 4 Perry, 1,216-50 feet, 12 bbls. Pearson Prop., Inc., No. 1 McInnis, 2,410-16 feet, 8 bbls.

Callahan County

Hughes and others No. 1 C. R. Straly, dry and abandoned at 4,540 feet. McCall and others No. 1 Clark, junked and abandoned at 540 feet.

Coleman County

Anzac Oil Corp. No. 1 Burk, 2,350-2,458 feet, 10 bbls. Coleman Oil & Gas Co. No. 1 Blatton, 2,105-27 feet, 5,000,000 feet of gas. Cooper Brothers and others No. 1 Stockard, 3,623-55 feet, 46 bbls. Hanson No. 1 Yarbrough, dry and abandoned at 1,085 feet.

Comanche County

Reinkie and others No. 1 McDaniel, temporarily abandoned 706 feet.

Eastland County

Baker and others No. 1 Molloy, 3,618-94 feet, 30 bbls.

Haskell County

Forest Development Corp. No. 1 Banker's Life, temporarily abandoned at 3,850 feet.

Jones County

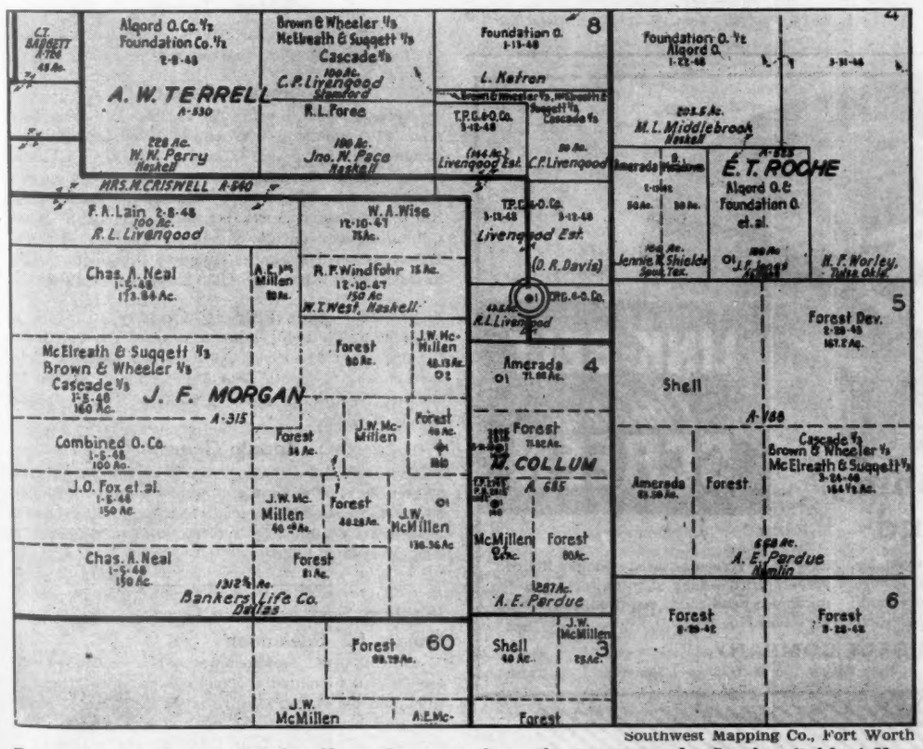
Healy-Walters No. 5 Daughtry, 1,898-1,916 feet, 310 bbls. Humble Oil & Refining Co. No. 12 Hollums, 3,247-53 feet, 469 bbls. Jones Associated Oil Co. No. 1 Young, dry and abandoned at 2,241 feet. Sandy Ridge Oil Co. No. 1 Steffens, 1,884-1,902 feet, 300 bbls.

Taylor County

Charter Oil & Gas and others No. 1 Fredrickson, 2,304-77 feet, 5 bbls. Dunigan Brothers No. 2 Hunter, dry and abandoned 3,812 feet. Fields and others No. 1 Sear, dry and abandoned at 3,610 feet.

Shackelford County

Guinn No. 16 Leschber, dry and abandoned at 485 feet. Hooker No. 1 Anna Fry, 368-73 feet, 4 bbls. Iron Mountain Oil Co. No. 1 Coker Estate, 3,213-17 feet, 749 bbls. Keyes and others No. 1-B Diller, dry and abandoned at 550 feet. Long No. 1 Sweeny, 357-69 feet, 4 bbls.



Southwest Mapping Co., Fort Worth

Texas Pacific Coal & Oil Co. No. 1 Livengood, north outpost to the Pardue field of Haskell County, which is indicating the first major extension for the area in several months

Owen-Snebold Oil Corp. No. 6 Ivy, 3,218-25 feet, 360 bbls.; No. 7 Ivy, 3,217-22 feet, 447 bbls. in 11 hours. Pemeta Oil Co. No. 12 McCosland, 708-20 feet, 3 bbls. Rodgers No. 1 Brooks, 140-43 feet, 3½ bbls. St. Mary's Oil & Gas Co. No. 7 Davis, 1,634-37 feet, 4 bbls.

Throckmorton County

White & Duncan No. 1 Reynolds, dry and abandoned at 3,102 feet.

WEST TEXAS COMPLETIONS
(24-hour gauges)

Andrews County

Humble Oil & Refining Co. No. 48 J. S. Means, 4,450-4,520 feet, 1,652 bbls.

Concho County

Barnett Oil Development Co. No. 1 Sims, location abandoned at 162 feet.

Crane County

Continental Oil Co. No. 9 D. Hughes, 2,378-2,423 feet, 378 bbls. Gulf Oil Corp. No. 178 McElroy, 2,690-2,880 feet, 1,351 bbls. Humble Oil & Refining Co. No. 19 Tubbs, 4,335-4,440 feet, 1,930 bbls. Texas Co. No. 1-G University, 3,175-3,495 feet, 154 bbls.

Crockett County

J. T. Petty No. 1 Hoover, location abandoned at 10 feet. Pitzer & West No. 2 Hoover, location abandoned. Simpson & White No. 1 A. C. Hoover, abandoned at 601 feet.

Fisher County

Montour Production Co. No. 2 W. L. Barker, abandoned at 944 feet. Sinclair Prairie No. 6 Frank Steele, dry and abandoned at 3,342 feet.

Ector County

Barnsdall Oil Co. No. 16 H. Foster, 4,110-4,256 feet, 1,070 bbls. Broderick & Calvert No. 3 E. F. Cowden, 4,095-4,280 feet, 1,104 bbls.; No. 9 Foster, 4,113-4,282 feet, 1,393 bbls. Continental Oil Co. No. 3 Johnson, 4,190-4,265 feet, 653 bbls. Gulf Oil Corp. No. 118 Goldsmith, 4,100-4,205 feet, 1,472 bbls.; No. 119 Goldsmith, 4,125-4,200 feet, 2,276 bbls.; No. 120 Goldsmith, 4,100-4,205 feet, 2,240 bbls.; No. 3 Parker, 4,077-4,250 feet, 44 bbls. Landreth Production Co. No. 2-M Scharbauer, 4,145-85 feet, 1,336 bbls.; No. 3-M Scharbauer, 4,131-75 feet, 1,270 bbls. Phillips and Pure No. 38 C. Cowden, 4,096-4,155 feet, 1,439 bbls. Schermerhorn No. 4-B Johnson, 4,010-4,195 feet, 991 bbls. Shell Petroleum Corp. No. 1-E University, 3,370-3,632 feet, 1,448 bbls. Sinclair Prairie No. 2-79 University, 3,475-3,642 feet, 956 bbls. Stanolind Oil & Gas Co. No. 13-B E. F. Cowden, 3,970-4,170 feet, 715 bbls.; No. 11 Roberts, 4,184-4,378 feet, 685 bbls. L. H. Wentz No. 2-B T. & P. Land Tr., 4,038-4,154 feet, 2,490 bbls.

Gaines County

Continental Oil Co. No. 1-52 A. L. Wasson, 4,920-85 feet, 1,006 bbls. Osage Drilling No. 1 B. E. Miller, dry and abandoned at 5,507 feet.

Glasscock County

O. B. Greathouse No. 1 Burns, location abandoned.

Hockley County

E. T. Marion No. 1 P. E. Lawless, temporarily abandoned at 88 feet. Penn Royalties No. 1 P. E. Lawless, temporarily abandoned at 85 feet.

Howard County

Continental Oil Co. No. 4-A Chalk, 2,810-2,910 feet, 1,080 bbls. Eastland Oil and others No. 2 Snyder, 2,585-2,822 feet, 405 bbls. Lockhart Oil No. 2 Robert Scott, 2,690-3,070 feet, 678 bbls. Magnolia Petroleum Co. No. 7 A. E. O'Daniels, 2,624-2,793 feet, 375 bbls. Merrick-Murphy-Lamb No. 1-B Chalk, 2,895-2,999 feet, 1,654 bbls. Shell Petroleum Corp. No. 2 T. P. Land Tr., 2,580-2,850 feet, 198 bbls.

Loving County

Argo Oil No. 1-B T. P. Land Tr., dry and abandoned at 4,165 feet.

Pecos County

Aero Gas & Refining Co. No. 6 Gregg, 1,470-1,495 feet, 101.2 bbls. British American No. 5 Peyton, 1,948-2,028 feet, 193 bbls. Stanolind Oil & Gas Co. No. 16-C Tippett, 455-507 feet, 24 bbls.

Upton County

Brown-Hancock-Hines No. 5-C Elder, 2,192-2,354 feet 1,104 bbls.; No. 5-C J. F. Lane, 2,260-70 feet, 228 bbls Humble Oil & Refining Co. No. 24-B Ricker, 2,630-85 feet, 228 bbls. Shell Petroleum Corp. No. 2 Baker, 2,185-2,225 feet, 998 bbls.

Ward County

Gulf Oil Corp. No. 102 Estes, 2,535-2,660 feet, 972 bbls. A. E. Lynch No. 2-A Himmel, 2,266-2,505 feet, 22 bbls. Sinclair Prairie No. 2 Magnolia-Sealy, 3,020-63 feet, 419 bbls.

Yoakum County

Honolulu Oil Corp. No. 6-677 Ruth Bennett, 5,110-5,260 feet, 2,064 bbls. Shell Petroleum Corp. No. 3 H. L. Lowe, 4,860-5,055 feet, 816 bbls. Texas Pacific Coal & Oil Co. No. 10 Ruth Bennett, 5,060-5,235 feet, 1,412 bbls. Toddie L. Wynne, Tr., No. 3 Willard, 4,885-5,010 feet, 266 bbls.

Winkler County

Skelly Oil Co. No. 27 S. M. Halley, 2,737-2,842 feet, 2,617 bbls. Texas Pacific Coal & Oil Co. No. 3 Baird and others, 2,760-3,070 feet, 709 bbls.

PANHANDLE COMPLETIONS
(24-hour tests)

Childress County

W. A. Agger No. 1 Schulter Heirs, dry and abandoned at 6,007 feet.

Gray County

Cities Service Oils No. 15 I. B. Hughey B, 3,160-3,275 feet, 284 bbls. Kewanee Oil Co. No. 23 Smith, 3,146-3,255 feet, 720 bbls. McRodd Oil Co. No. 1 J. S. Morse, 2,653-2,750 feet, 20 bbls.

Hutchinson County

Gulf Oil Corp. No. 83 Dial, 2,875-2,960 feet, 482 bbls. Huber Petroleum Co. No. 1 Texas-Herring, 2,796-2,869 feet, 6,869,000 feet gas. W. W. Holmes No. 4 William Lyall, 2,632-2,705 feet, 486 bbls. Phillips Petroleum Co. No. 8 D. Jordan, 2,895-2,927 feet, 181 bbls.

Moore County

Texoma Natural Gas Co. No. 8-M Coon, 3,030-3,458 feet, 28,675,000 feet gas.

Southwest Texas Fields

(Continued from Page 76)

Driscoll field: Texas Co. No. 1 Richardson, perforated casing 5,112-15 feet, 96 bbls., ½-inch choke. Saxet field: Barnsdall Oil Co. No. 7-A Humphries, sand 5,948-6,015 feet, 94 bbls., 7/64-inch choke. Conroe Drilling Co. No. 10 Bliss, perforated casing 5,895-98½ feet, 84 bbls., 5/32-inch choke. Hiawatha Oil & Gas Co. No. 7-B Smith, perforated casing 7,261½-64½ feet, 165 bbls., 5/32-inch choke. Southern Minerals Corp. No. 22 Bliss, 6,922 feet, 31 bbls. distillate, 3/16-inch choke. Western Gulf Petroleum Co. No. 5 Isensee, perforated casing 4,868-72 feet, 142 bbls, 5 per cent salt water, 5/32-inch choke. Saxet field: Western Gulf Oil Corp. No. 7 Isensee, 6,931 feet, 138 bbls., ½-inch choke. West Saxet field: Phillips Petroleum Co. No. 2 Clark, perforated casing 5,810-13½ feet, 171 bbls., 9/64-inch choke. Renwar Oil Corp. No. 3-B Kennedy, 7,005 feet, 40 bbls., eight hours, 5/32-inch choke. Rutherford Oil Corp. No. 2 McKenzie, 7,050 feet, 57 bbls., eight hours, 5/32-inch choke.

Milam County

Minerva Rockdale field: W. A. Jones No. 2-A Kemp, 717 feet, completed as small gas well

Refugio County

Refugio field: Houston Oil Co. No. 53 Rooke, 6,214 feet, 216 bbls., ⅛-inch choke. Tomoconnor field: Copano Oil Co. No. 11-B O'Connor, 5,927 feet, 611 bbls., ¼-inch choke. Copano Oil Co. No. 15-B O'Connor, sand 5,798-5,918 feet, 622 bbls., ¼-inch choke. Copano Oil Co. No. 30-B O'Connor, 5,904 feet, 611 bbls., ¼-inch choke. Quintana Petroleum Co. No. 70-A O'Connor, 5,932 feet, 1,201 bbls., ⅜-inch choke. Quintana Petroleum Co. No. 32-C O'Connor, 5,925 feet, 1,430 bbls., ⅜-inch choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 1 Brooks, perforated casing 5,676-79 feet, 154 bbls., 7/64-inch choke. Plymouth field: Plymouth Oil Co. No. 101 Welder, perforated casing 5,639-42½ feet, 200 bbls., 9/64-inch choke.

Zapata County

Comitas field: J P. Nash No. 31 Haynes, sand 1,151-57 feet, 35 bbls., pumping. Escobas: Dulup Oil Co. No. 36 Trevino, sand 1,350-57 feet, 110 bbls., pumping. Transwestern Oil Co. No. 14-E Trevino, sand 1,257-78 feet, 14 bbls., pumping.

Western Saskatchewan Gas Project for Saskatoon

SASKATOON, Saskatchewan.—The Saskatoon city council has appointed a committee to study proposals submitted by Franco Oils, Ltd., W. F. Thorn of Moose Jaw and associates for a natural gas supply. It is proposed to pipe gas from fields already developed in western Saskatchewan. No plans have been made to supply Regina or Moose Jaw.

LINK-BELT *Vibrating* SCREEN

for Reconditioning Rotary Mud

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Michigan Field Report

By
O. C. PRESSPRICH

Allegan County Again Heads Field Developments in State

SAGINAW, Mich., Sept. 5.—Southwestern Michigan as an oil center appeared headed for a permanent place in the state's oil history as bustling development kept pace with discoveries which in recent weeks have advanced several distinct Allegan County fields to the forefront of interest.

Newest of the Allegan County pools to claim attention, and further to confirm the Overisel Township discovery is the Heath Township pool, lying immediately south of Overisel. Three completions in the past week in Heath indicate a favorable southern extension of the Overisel pool, while recent Monterey Township failures, diagonally southeast of the Overisel discovery, show the pay zone dry in that direction. The three Heath producers added 1,850 bbls. daily to Overisel field runs.

Five Allegan County townships showed activity in the week's new production report. There were five producers and four dry holes. The producers were practically half of the state's new production of the week, which showed 11 completions and 8 dry holes in all fields. Overisel added one producer considerably smaller than the discovery, yet a highly favorable test, and had one dry hole in the discovery section, and Salem Township, immediately east of Overisel, had a similar record of one producer and one failure. Dorr and Gun Plains townships logged a failure each to round out the week's activity in Allegan.

Other Michigan counties to share in the production of the week included faithful Buckeye with two producers and one dry hole, while Bentley Township of Gladwin County, Edenville Township of Midland County, Wise Township of Isabella County and Redding Township of Clare County each added one producer.

Wildcat Producer

Of the new production other than in Allegan fields, the most outstanding was Pure Oil Co.'s wildcat test in Redding Township, Clare County, which indicated a valuable north extension of the Clare-Freeman field. Testing was continuing at the well, which logged a hole full of oil at 3,908 feet, in the Monroe formation, and gave indications of becoming an assured commercial producer. The Pure test in Redding is approximately 1½ miles north of Higelmire Trust's discovery in Freeman Township, and would appear to extend commercial production considerably in the area.

Most drilling activity centered in the Allegan sector, where numerous offset and wildcat tests are reported drilling and projected, due to the Overisel strike, and the more recent Bloomingdale Township discovery in Van Buren County. Drilling permits for these two fields predominated during the week.

Allegan County

Heath Township (3n-14w), challenging the productiveness of its northern neighbor, Overisel, broke forcibly into the production column last week for the first time with three prolific wells, and no dry holes. All of the producers were in Section 1, immediately south of Section 36, Overisel Township, where the discovery wildcat boomed southwestern Michigan's newest field. Two of the Heath producers were those of the Gordon Oil Co. on the Sholten lease. The No. 2 Sholten, NE NE NE Section 1, acidized, was rated at 650 bbls. daily, and the No. 3 Sholten, NW NW NE Section 1, acidized, was gauged at 800 bbls. daily, rivaling the Overisel discovery well. Fortney Oil Co. No. 1 Wesseling, SE NW NE Section 1, brought in a 400-bbl. acidized producer for the third completion of the week. Seven other tests are drilling in the area, aimed at proving up more territory, while weekly permit lists continue to grow.

In Overisel Township (4n-14w), one producer and a dry hole, both in the discovery section of the Overisel pool, caused some speculation. The producer was Black Rock Oil Co. No. 1 Sholten, NE SE SW Section 36, which gauged 350 bbls. daily after acid treatment, but less than a mile southwest J. W. McIntosh No. 2 Groenheide, SW SE SW Section 36, was rated a dry hole. The Black Rock-Sholten producer is four locations west of Cline's discovery, while McIntosh's failure is seven locations west and three locations south of the discovery well. Whether the Overisel failure indicated a southwestern boundary marker was a matter of conjecture, with other tests now under way looked to for confirmation of a boundary.

Salem Township (4n-13w): Exploration of territory adjacent to Overisel Township on the east netted one producer and a dry hole in Salem Township last week. An enigmatic picture was presented by the producer and failure, offsets owned by the same company. The Bridges Basin Oil Co. No. 2 Lampen, SW SW SW Section 31, developed production of 300 bbls. daily after acid, while the same company's No. 1 Lampen, NW SW SW Section 31, north offset of the producer, was a failure. Operators were speculating on the possible extreme narrowness of the productive formation in the area, and awaited further testing in the vicinity to prove anything conclusive.

Dorr Township (4n-12w): A dry test was the lone completion of the week in Dorr Township, at Bridges Basin Oil Co. No. 2 Bachman, SW NE NE Section 30. Nine tests are drilling in the area.

Gun Plains Township (1n-11w): Archie M. Henry No. 1 Honeysette, SW SW SE Section 27, only active test in the township, was slated for abandonment after finding oil formations dry.

Clare County

Redding Township (19n-6w): What was regarded as an important extension of the Freeman Township, Clare County, oil pool was the semicompletion the past week of Pure Oil Co. No. 1 Switzer, C S half NW SW Section 27, about 1½ miles north of Higelmire Trust's discovery. The test filled with oil after being deepened 3 feet to 3,908 feet in the Monroe formation, and testing was in order. The well probably will be treated. The Pure wildcat, first to test the Redding area, was said by operators to be highly important, not only as an extension test, but as a producer from the Monroe formation in an area where there is practically no Dundee limestone. Other confirmation tests are approaching the pay zone in the sector.

Midland County

Edenville Township (16n-1w): First new production in the Edenville pool in more than three weeks was a prolific natural producer at Sun Oil Co. No. 11-B State-Edenville, NE NE SE Section 27, which rated more than 400 bbls. naturally. The test is in proved territory and revealed nothing new regarding productive formations in the sector.

Gladwin County

Buckeye Township (18h-1w): Two small producers and a dry hole summarized drilling activity in Michigan's top pool. Both producers are in the so-called midway sector of the south (Oard) pool while the dry hole established a far western outpost for the midway area. T. F. Caldwell No. 4 Hostetler, SW SW NE Section 27, continued to add to the western area of production in the midway sector with a 100-bbl. daily producer after acid. Smith Petroleum Co. No. 2 Wooding-Chovich, SE SW SE Section 23, the midway discovery section, was logged a 35-bbl. well after acid. The Buckeye failure was Bell & Marks No. 1 State, SE SE SE Section 20, more than 2 miles west of the nearest production.

Bentley Township (17n-2e): Pyramid Oil Co. No. 1-B Lake, NE SW SE Section 20, added a producer to the Bentley field, rated at 70 bbls. daily after acid treatment. The test ranked average with surrounding production.

Billings Township (17n-1e): Gordon Oil Co. No. 3 Ashley, SE NW SW Section 4, failed to rate commercial production this week and will be abandoned.

Isabella County

Wise Township (16n-3w): Turner Petroleum Co. No. 1 White, SE NE NW Section 28, was acidized to a production of 75 bbls. daily. Wise Township is pointed out by operators as fertile territory for exploration as the result of the Turner well's showing.

Fremont Township (13n-5w): Water doomed another Fremont Township test last week when Bell & Marks No. 1 Moore, SE NE SW Section 6, was plugged and abandoned. A week earlier Rowmor Corp. abandoned a test in Section 26 because of water.

Mecosta County

Fork Township (16n-7w): The only active test in the township was plugged last week as unproductive. It was Daily Crude Oil Co. No. 1 Thrush, SE NW SE Section 25.

N. Y.-Penna. Gas Fields

COUDERSPORT, Pa., Sept. 5.—Locations for two new tests in the New York-Pennsylvania deep sand gas fields were reported during the past week. New York State Natural Gas Co. is building the rig on the Parks Estate No. 2 farm, Woodhull Township, Steuben County, and Hanley & Bird are building the rig on the F. Rook No. 2 farm in Harrison Township, Potter County.

The well drilled by G. L. Cabot, Inc., on the Gibson farm in Woodhull Township was shot during the week, increasing its production from 738,000 feet to 1,300,000 feet. The Oriskany was found at 3,602-30 feet. Cabot is also preparing to drill three other tests in this township, on the Charles Crane, Elmer Downey and George Hotaling farms.

In active Willing Township, Allegany County, Van Gelder and others have cemented 4,727 feet of casing in their test on the J. O'Hara farm; Empire Producing Co., is drilling at 4,553 feet on the Floyd Wilson farm after drilling through a lime formation at 4,194-4,229 feet and topping the Tully at 4,253 feet; Penn York is drilling at 3,940 feet on the Cyrus Wilson farm; Belmont Quadrangle Drilling Co., at 1,495 feet on the Hilligas No. 2 farm, and Cunningham Natural Gas Co., at 335 feet on the William Shear farm. Belmont is also drilling at 2,310 feet on the A. H. Billings farm in Independence Township.

G. L. Cabot, Inc., is running casing in its test on the West Bingham Grange farm, Bingham Township, Potter County, which is down 4,866 feet. This company is also building the rig on the Frank Raymond farm, this township, and has a location on the Emma Elliott farm, Harrison Township. New York State Natural Gas Co. is drilling at 4,395 feet on the L. E. Hanes farm, Harrison Township, after reaching the Tully at 4,005-57 feet.

In wildcat drilling in Pennsylvania McKenry and others are down to 4,800 feet on the Stellman farm, Rockland Township, Venango County, after definitely placing the top of the Onondaga at 4,785 feet; Updegraph is drilling at 5,523 feet on the O. E. Erickson farm, Elk Township, Warren County; Wasson and others encountered a gas blow below 5,200 feet on the E. S. Collins farm, Howe Township, Forest County, and G. L. Cabot, Inc., is drilling at 2,010 feet on the Flora Bell Joy farm, Brookfield Township.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Sept. 3.—In West Central Turner Valley, Vulcan-Brown Petroleum No. 1, LSD 10, Section 5-19-2w5, finished at 7,459 feet after drilling 471 feet in the lime, with natural production prorated at 3,472 bbls. a day, was given acid treatment. After running 3-inch tubing, it started flowing around 200 bbls. an hour, and later produced 3,500 bbls. in 15 hours, or at the rate of around 5,600 bbls. a day. The largest producer in the field previously was Frontier Royalties No. 1, with 5,078 bbls. potential.

In the same section, a few hundred yards to the southeast, Mercury Royalties No. 1, LSD 8, bottoming at 6,666 feet, is producing around 390 bbls. a day and 75,000 feet of gas after acidizing.

In Section 29-18-2w5, Davies Petroleums No. 1, LSD 2, has finished its 11-day government test after acidization. The 24-hour open flow was 1,481 bbls., with potential rated at 987 bbls. Potential prior to acidization was 664 bbls. a day.

In the same section Royalite Oil Co. No. 31, LSD 6, finished in the lime at 8,064 feet, has not released production figures, but looks like a small well, around 350 bbls.

In Section 17-18-2w5, Royalite No. 32, LSD 8, finished at 7,308 feet after getting the lime at 6,800 feet, is estimated around 1,500 bbls., after acidizing.

Tests in the Lime

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 33, LSD 2, is below 7,513 feet after getting the lime at 7,239 feet.

In Section 29-18-2w5, Commoil No. 2, LSD 10, finished drilling at 7,665 feet and looks like a good producer.

In Section 20-18-2w5, York Oils No. 1, LSD 2, is below 7,134 feet after getting the Madison limestone at 6,990 feet. Sunset Oils No. 2, LSD 7, is below 7,109 feet after getting the Madison at 7,037 feet.

Okalta Operations

West of the proven field, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, is standing cemented at 9,745 feet, after getting the Madison limestone at the record depth of 9,731 feet. The hole is in excellent conditions, but completion will be deferred, pending arrangements with other acreage holders in the vicinity. The heavy-duty rotary outfit is being moved to Okalta No. 7, LSD 3, Section 16-18-2w5, which has been standing cemented at 3,050 feet, and which will be completed before work is resumed on the deep test.

Royalite Oil Co. has located No. 36 in Section 32-18-2w5, on the center line of LSD's 13 and 14. Location is about a quarter mile northwest of Royalite No. 30 producer. Cellar is being dug and gas lines laid. The Royalite company recently took over S half LSD's 13 and 14 from Shamrock Petroleums, Ltd., which had a tentative location in LSD 14.

West Side Drilling

In Section 13-19-3w5, 3 miles northwest of Vulcan-Brown Petroleums No. 1 producer, Sun Ray Oil Development Co. of Calgary, backed by Montreal interests, is rigging cable tool equipment with steel derrick from Sunburst Oil Co. No. 1. Test will spud in a few days.

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 34, LSD 7, is below 3,405 feet.

In Section 32-18-2w5, Davies Petroleums No. 4, LSD 10, is in the Blairmore formation below 5,655 feet. J. & C. Perdue No. 1 British Colonial, LSD 5, is resuming from 1,525 feet. The 16-inch casing will be set at 1,500 feet preparatory to fishing lost tools. Cable tools will be used to 3,500 feet, and the hole completed with rotary equipment. West Turner Petroleums No. 3, LSD 6, is in Benton formation below 5,239 feet. National Petroleum Corp. No. 3 has been spotted in LSD 15.

In Section 29-18-2w5, Command Oils No. 1, LSD 14, is in the Benton formation below 4,800 feet.

In Section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, is below 7,523 feet and entering the limestone. Producers Crude Corp. No. 1, LSD 11, is below 5,002 feet.

In Section 17-18-2w5, Extension Royalties No. 1, LSD 14, is standing at 3,685 feet. Anglo-Canadian Oil Co. No. 3, LSD 10, is below 3,280 feet.

In Section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, is below 6,212 feet. Richwell Oil Co. No. 1, LSD 5, is below 5,443 feet. Royal Canadian Oil Co. No. 2, LSD 4, is below 4,906 feet.

South End Tests

In Section 9-18-2w5, South Turner Valley, D. & D. Oil Co. No. 2, LSD 12, is below 230 feet. Newell & Chandler are handling the contract, using rotary equipment. Location is on Calgary & Edmonton acreage and British American Oil Co., Brown Oil Corp., Calmont Oils and Madison Oils are jointly interested in the venture, which will test a potential southwest extension of the field, west and south of National Petroleum Corp. No. 2.

In the far south Anglo-Canadian Oil Co. No. 2, LSD 2, Section 33-16-2w5, is below 6,280 feet and looks like a deep test.

Scottish to Resume

West of the proven crude area, Scottish Petroleums No. 1, LSD 16, Section 19-18-2w5, standing around 900 feet, will install rotary equipment for deeper drilling. Location is south and a little east of Okalta Oils No. 6.

Anglo-Canadian Oil Co. No. 1, LSD 16, Section 31-18-2w5, is in the Benton formation below 5,948 feet.

East Side Operations

On the Calling Valley structure, east of Turner Valley, Sentinel Oil Co. No. 1, LSD 1, Section 8-20-2w5, has resumed and is below 6,800 feet.

North Turner Valley

In North Turner Valley, Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5, is in the Benton formation below 5,776 feet.

In Section 27-20-3w5, Royalite Oil Co. No. 35, LSD 7, is below 1,467 feet.

Location Changed

Lease Holdings, Ltd., No. 1 location has been changed from LSD 2, Section 21-18-2w5, to LSD 15, Section 16-18-2w5, and permit has been secured for drilling. The new location is in the southwest extention to the west flank crude area, and not far from Frontier Royalties No. 1 producer. Operations are being financed by European interests headed by P. J. Hatterman van Oudenol.

Tests in the Foothills

On the Pouce Coupe structure in the northern foothills west of Peace River, Guardian Oil Co. No. 1, Section 7-80-12w6, is preparing to resume after cementing 8-inch casing at 1,065 feet. The test will be carried to the Devonian limestone around 4,300 feet. Batcheller Syndicate No. 1, Section 24-79-2w6, is preparing to resume from 1,224 feet.

On the Brazeau structure west of Edmonton, Home Oil Co. No. 1, LSD 16, Section 7-43-17w5, is setting 10-inch casing at 4,520 feet.

On the Clearwater structure, Canyon Oils No. 1, Section 31-34-9w5, has diamond drill outfit rigged. Location is in the Clearwater Forest Reserve west of Innisfail, where geologists have mapped a structure 15 miles long and 2 miles wide. Drilling will start in the Banff shales, with production expected in the Devonian limestone. Work was delayed by bad weather, and the company had to construct 4 miles of road and three bridges over the Clearwater River before equipment could be moved in. The Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary has a joint interest in the test.

On the Bearberry structure, Petroleum Structures No. 1, LSD 4, Section 2-33-7w5, is below 1,401 feet after cementing surface casing at 1,122 feet.

On the Kootenay dome, Roxana Petroleums No. 1, Section 8-24-7w5, is shut down at 3,932 feet, waiting for casing.

Southern Foothills

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-3w5, is shut down at 6,202 feet for boiler repairs. It is expected to resume early in September.

On the south end of the Highwood-Sinclair structure, J. & J. Syndicate No. 1 has been spotted in LSD 8, Section 12-16-3w5. Derrick and camp equipment have been purchased from Hunter Valley Oil Co. No. 1 and drilling will start about September 20 with standard tools. Acreage is subleased from Waite Valley Holdings, Ltd. Test is expected to get the Cardium sandstone at shallow depth, around 760 feet, with the Madison limestone around 4,550 feet.

On the Watson structure, Mar Jon Oil Co. No. 3, LSD 3, Section 4-10-2w5, is installing rotary equipment to resume from 5,520 feet. Test has been standing for about two years, after encountering a strong gas pocket.

Border Fields

In the Taber field, southern Alberta, North Taber Royalties No. 1, LSD 7, Section 10-11-15w4, is below 825 feet, cementing 10-inch casing, after encountering additional gas, bringing the total flow to around 2,000,000 feet. Plains Petroleum Corp. No. 4, LSD 15, Section 25-9-17w4, is below 2,650 feet. Plains No. 5, LSD 2, Section 36-9-17w4, is standing at 747 feet. Border Petroleums No. 1, LSD 5, Section 32-19-17w4, is below 2,540 feet.

On the Del Bonita structure, Terminal Oil Co. No. 2, NW quarter Section 7-1-21w4, is below 175 feet. Terminal No. 1, 3,000 feet east, is rigging to clean out and deepen.

In the Steveville area, Anaconda Oil Co. No. 1, LSD 15, Section 9-22-12w4, is working on casing at 2,100 feet.

On the Rogers-Imperial structure east of Coutts, Range Oil & Gas Co. No. 3, LSD 15, Section 20-1-11w4, is at 2,630 feet, working on water shut-off.

Lethbridge Well Testing

In the Lethbridge area, Northwest Co. No. 1 Lethbridge Southern, LSD 8, Section 1-8-21w4, bottoming in the Madison limestone at 4,055 feet, has been making swabbing tests. The first 24 hours after the well was bailed dry, it produced 21 bbls. of oil and 99 bbls. of water; with 10.2 bbls. of oil and 66 bbls. of water in the next 24 hours. The test is about 60 feet in the lime.

In the same area, Lethbridge Petroleums & Refining No. 1, LSD 12, Section 11-8-22w4, is resuming after cementing off caving at 2,915 feet.

Milk River Test

On the Bridge Dome structure, Anglo-Canadian Oil Co. No. 1 Milk River, LSD 10, Section 4-2-13w4, is below 225 feet. Location is 13 miles east of Coutts and 15 miles southeast of Milk River, on acreage taken over from T. Boyd Kyle and associates of Montana. Heavy duty standard tools are being used starting with 24-inch hole, and the Madison limestone is expected around 2,500 feet. Drilling Contractors, Ltd., have the contract.

Oil From Tar Sands

The first shipment of fuel oil from the bituminous sands of northern Alberta was delivered recently by Hudson's Bay transport barge to Consolidated Smelters, Ltd., at Goldfields, in the northern Saskatchewan mining area. The shipment, amounting to 9,000 gallons, or over 250 bbls., came from the International Bitumen Co. plant at Bitumont, in the Athabaska area. Consolidated Smelters has been operating two 50-hp. wood burners, but is installing a 250-hp. oil burner. With only small and scattered timber, wood is scarce and expensive to haul, cut and handle, and it is expected the new Bitumont fuel oil will be more efficient and economical. If it proves satisfactory, many private houses in the mining settlement will install oil burners.

Saskatchewan Gas Strike

In the Lloydminster field, western Saskatchewan, Northern Utilities Co. No. 1, LSD 1, Section 26-49-28w3, finished recently at 1,676 feet, was an unexpected completion. The well blew in suddenly under heavy pressure, shooting the drilling fluid over the derrick. Early reports indicate between 8,000,000 and 10,000,000 feet open flow with 430 pounds pressure. Location is 2 miles south of Lloydminster and one-quarter mile from the Alberta boundary. The company, headed, by Charles Mills, who handled the drilling, is financed by Lloydminster capital.

Ontario Operations

In Huron County, Ontario, Hidden Lake Oil Co., headed by W. L. Forrest of Goderich, is rigging standard equipment on the Mann farm in Hullett Township, near Clinton. Test will spud early this month. Lease is subject to one-eighth royalty. Location is about 2 miles east of the Howard Trewartha farm on the Goderich-Hullett town line, where Huron & Bruce Oil Co. has a location.

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Shell Oil, No. 1-28 Covarrubias, Capitan, Santa Barb.	32- 5-30	1,675	O. S. drlg.
Barnsdall Oil, No. 19 Bell, Elwood, Santa Barbara	15- 4-29	5,690	sd. sh. drlg.
Hancock-Bush, No. 3 Bradley, Santa Maria, S. Barb.	26-10-34	3,222	sd. sh. drlg.
Union Oil, No. 4 Vicente, Santa Maria, Santa Barbara	21-10-34	3,675	sd. sh. drlg.
O'Donnell, J. E., No. 1 Helen, Lompoc, Santa Barbara	8- 7-33	3,998	sd. sh. drlg.
Barnsdall Oil, No. 5 Magenheimer, Gato Ridge, S. B.	9- 8-32	3,035	hd. sh. drlg.
Petrol Corp., No. 511 Magenheimer, Gato Ridge, S. B.	9- 8-32	4,087	br. sh. drlg.
Oceanic Oil, No. 1 Santa Barbara Mesa, S. Barbara	28- 4-27	3,721	sd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,691	cleaning out
Holly Dev., No. 1 Macrate, Ojai, Ventura	27- 4-23	4,786	idle
Ventura Drlg., No. 1, Ojai, Ventura	10- 3-23	350	fishing
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	6,346	hd. sh. drlg.
Merchants Pet., No. 1 Sespe, Ventura	1- 4-20	865	hd. sh. drlg.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	570	hd. sh. drlg.
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,150	sd. sh. drlg.
McKinnis, C. R., No. 1, Hopper Canyon, Ventura	14- 4-19	780	sd. sh. drlg.
Texas Co., No. 135 Shiells, Shiells Canyon, Ventura	4- 3-19	1,190	sd. sh. drlg.
Continental Oil, No. 9 Grubb, San Miguelito, Ventura	24- 3-24	5,540	sd. sh. drlg.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	2,860	sd. sh. drlg.
C. C. M. Oil, No. 7 Oakgrove, Padre Canyon, Ventura	23- 3-24	4,597	gr. sd. drlg.
C. C. M. Oil, No. 7-C Hobson, Rincon, Ventura	17- 3-24	3,561	flow. 105 b.d.
Richfield Oil, No. 5-F State, Rincon, Ventura	17- 3-24	3,160	sd. sh. drlg.
Tide Wtr. A. O., No. 75 Lloyd, Ventura Ave., Ventura	26- 3-23	7,010	sd. sh. drlg.
Tide Wtr. A. O., No. 111 Lloyd, Ventura Ave., Ventura	27- 3-23	9,807	water witch
Tide Wtr. A. O., No. 127 Lloyd, Ventura Ave., Ventura	27- 3-23	8,765	sd. sh. drlg.
Tide Wtr. A. O., No. 134 Lloyd, Ventura Ave., Ventura	27- 3-23	8,378	P.B. 8,112
Tide Wtr. A. O., No. 7 Hartman, Ventura Ave., Vent.	22- 3-23	7,370	sd. sh. drlg.
Tide Wtr. A. O., No. 11 McGonigle, Vent. Ave., Vent.	23- 3-23	9,380	hd. sd. drlg.
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	7,390	redrlg. 6,098
Shell Oil, No. 30 Edison, Ventura Ave., Ventura	20- 3-23	6,660	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	8,320	O. S. drlg.
General Pet., No. 18 Barnard, Ventura Ave., Ventura	21- 3-23	8,306	O. S. drlg.
Lloyd Corp., No. 2 Dabney-Lloyd, Vent. Ave., Ventura	23- 3-23	4,690	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	973	hd. sd. drlg.
Cal. Lands, Inc., No. 1 Occidental, Lost Hills, Kern	24-26-20	3,005	sd. sh. drlg.
Belridge Oil, No. 27-12, North Belridge, Kern	27-27-20	5,984	sd. sh. drlg.
Belridge Oil, No. 27-19, North Belridge, Kern	27-27-20	3,521	sd. sh. drlg.
Belridge Oil, No. 27-31, North Belridge, Kern	27-27-20	1,982	sd. sh. drlg.
Tide Wt. A. O., No. 22-3, North Belridge, Kern	22-27-20	5,288	sd. sh. drlg.
Tide Wtr. A. O., No. 22 North Belridge, Kern	21-27-20	2,462	sd. sh. drlg.
Richfield Oil, No. 2 Belridge, North Belridge, Kern	22-27-20	8,375	flow 1,290 b.d.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	8,430	O. S. drlg.
B & S Drlg., No. 1 Newberry, Rount Mtn., Kern	32-28-29	1,902	sd. sh. drlg.
Honolulu Oil, No. 49, Round Mountain, Kern	20-28-29	1,804	pump 395 b.d.
Honolulu Oil, No. 58, Round Mountain, Kern	20-28-29	1,596	sd. sh. drlg.
Kern Oil, No. 25-3-C, Kern Front, Kern	25-28-27	1,965	pump 190 b.d.
Helm & Smith, No. 6-A Kernco, Kern River, Kern	34-28-28	670	pump 5 b.d.
Helm & Smith, No. 7-A Kernco, Kern River, Kern	34-28-28	409	sd. sh. drlg.
Cal Star Oil, No. 5-80, Kern River, Kern	22-28-27	2,660	sd. sh. drlg.
Federal Drlg., No. 3 Glide, Mount Poso, Kern	13-26-28	2,206	dry; abd.
Master Pet., No. 1 U.S., Mount Poso, Kern	34-26-28	1,162	sd. sh. drlg.
Ring Oil, No. 7 Bowles, Mount Poso, Kern	29-26-28	1,740	rig to pump
Ring Oil, No. 3 Rogers-Jones, Mount Poso, Kern	29-26-28	1,691	rig to pump
Richfield Oil, No. 1, Union Avenue, Kern	6-30-28	4,587	sd. sh. drlg.
Western Gulf Oil, No. 38-B, KCL, Fruitvale, Kern	14-29-27	3,012	flow 320 b.d.
Western Gulf Oil, No. 4 Price, Fruitvale, Kern	22-29-27	3,668	will deepen
Meridian Oil, No. 5 fee, Fruitvale, Kern	23-29-27	3,108	O. S. drlg.
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	9,215	gr. sd. drlg.
Pacific O. & G., No. 3 Guisti, Fruitvale, Kern	14-29-27	2,964	pump 218 b.d.
Hogan Pet., No. 3 Peters, Mountain View, Kern	5-31-29	5,215	pump 108 b.d.
Greer, P. H., No. 2 Perrel, Mountain View, Kern	9-31-29	6,638	redrlg. 6,310
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	12,681	sd. sh. drlg.
Continental Oil, No. 1, KCL, Seaboard, Wasco, Kern	26-27-24	12,778	whipstocking
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-27-24	12,170	sd. sh. drlg.
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	11,097	sd. sh. drlg.
Cal Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	123	sd. sh. drlg.
Superior Oil, No. 2 Ruhl, Rio Bravo, Kern	1-29-25	4,843	sd. sh. drlg.
Superior Oil, No. 1 Helbling, Rio Bravo, Kern	1-29-25	13,998	sd. sh. drlg.
Union Oil, No. 2-34, KCL, Rio Bravo, Kern	34-28-25	11,204	redrlg. 9,877
Union Oil, No. 4-34, KCL, Rio Bravo, Kern	34-28-25	11,510	flow 3,995 b.d.
Union Oil, No. 5-34, KCL, Rio Bravo, Kern	34-28-25	9,380	sd. sh. drlg.
General Pet., No. 4 Wagoner, Rio Bravo, Kern	35-28-25	10,214	fishing
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	10,370	sd. sh. drlg.
Superior Oil, No. 1 Krause, Greeley, Kern	21-29-26	9,030	sd. sh. drlg.
Continental Oil, No. 2-B, KCL, Rosedale, Kern	12-29-26	8,596	sd. sh. drlg.
Shell Oil, No. 67-30-A, KCL, Ten Section, Kern	30-30-26	7,750	sd. sh. drlg.
Shell Oil, No. 72-31-B, KCL, Ten Section, Kern	31-30-26	8,200	O. S. drlg.
Shell Oil, No. 47-20-B, KCL, Ten Section, Kern	20-30-26	4,994	sd. sh. drlg.
Shell Oil, No. 67-20-B, KCL, Ten Section, Kern	20-30-26	8,374	P.B. 8,204
Shell Oil, No. 45-14-A, KCL, Canal, Kern	14-30-25	8,096	sd. sh. drlg.
Ohio Oil, No. 8-E, KCL, Canal, Kern	14-30-25	6,971	sd. sh. drlg.
Standard Oil, No. 1 Rio Bravo fee, Canal, Kern	12-30-25	5,760	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Tupman, Kern	32-30-25	7,196	sd. sh. drlg.
Ohio Oil, No. 1-F, KCL, Coles Levee, Kern	10-31-25	4,290	sd. sh. drlg.
Ohio Oil, No. 8-A, KCL, Buena Vista Lake, Kern	32-31-26	11,186	testing
Cates, M. B., No. 8 Special, Midway-Sunset, Kern	2-11-24	859	pump 10 b.d.
Gibson Oil, No. 3 Blanck, Midway-Sunset, Kern	6-11-23	255	sd. sh. drlg.
Mascot Oil, No. 3 Midway, Midway-Sunset, Kern	36-32-23	1,650	pumping test
Lilly Oil, No. 3 Lilly, Midway-Sunset, Kern	36-32-23	377	sd. sh. drlg.
Magnuson, C. A., No. 1 Midway, Midway-Sunset, Kern	19-31-23	3,377	gr. sd. drlg.
Big Ten Oil, No. 12 Midway, Midway-Sunset, Kern	36-32-23	1,273	P.B. 1,265
Shell Oil, No. 4-26, KCL, San Emidio, Kern	26-11-22	10,374	dry; abd.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	6,050	sd. sh. drlg.
Petrol Corp., No. 33-5 Reserve, Tejon Ranch, Kern	33-11-19	4,607	will deepen
Pure Oil, No. 1 SPL, Huron, Fresno	31-18-17	11,994	hd. sh. drlg.
Magnet Oil, No. 2 Fearon, Fresno	18-19-15	3,590	sd. sh. drlg.
Tide Wtr. A. O., No. 1-F, North Coalinga, Fresno	1-19-15	800	sd. sh. drlg.
Jacalitos Oil, No. 1, Jacalitos Hills, Fresno	14-21-15	7,110	hd. sh. drlg.
Pet. Sec., No. 7-7-F, Guijarral Hills, Fresno	18-20-16	6,750	sd. sh. drlg.
Pet. Sec., No. 88-12-C Grimes, Guijarral Hills, Fresno	12-20-15	6,786	O. S. drlg.
Goetz, F., No. 1 Guijarral Hills, Fresno	10-20-15	5,851	redrlg. 5,498
Standard Oil, No. 82-13 fee, Guijarral Hills, Fresno	13-20-15	5,990	sd. sh. drlg.
Texas Co., No. 19 Mohawk, Guijarral Hills, Fresno	12-20-15	4,424	P.B. 4,137
Universal Cons'd. Oil, No. 1, Guijarral Hills, Fresno	12-20-15	7,118	hd. sd. drlg.
Tide Wtr. A. O., No. 66 Guardian, Guij. Hills, Fresno	12-20-15	5,560	sd. sh. drlg.
Superior Oil, No. 1 Hight, Guijarral Hills, Fresno	8-20-15	7,750	sd. sh. drlg.
Dauphin Dev., No. 2 Boone, Alcalde, Fresno	30-21-14	960	sd. sh. drlg.
K.N.D.A., No. 85-34-J, Kettleman North, Kings	34-21-17	8,470	flow 520 b.d.
K.N.D.A., No. 38-6-Q, Kettleman North, Kings	6-22-18	7,471	br. sh. drlg.
K.N.D.A., No. 27-8-Q, Kettleman North, Kings	6-22-18	7,310	sd. sh. drlg.
K.N.D.A., No. 58-8-Q, Kettleman North, Kings	8-22-18	7,760	gr. sd. drlg.
K.N.D.A., No. 27-16-Q, Kettleman North, Kings	16-22-18	8,442	recmtd. 7,808
K.N.D.A., No. 38-16-Q, Kettleman North, Kings	16-22-18	6,640	br. sh. drlg.
K.N.D.A., No. 43-20-Q, Kettleman North, Kings	20-22-18	8,914	testing
K.N.D.A., No. 27-22-Q, Kettleman North, Kings	22-22-18	8,340	sd. sh. drlg.
Standard Oil, No. 21-13-P, Kettleman North, Kings	13-22-17	7,650	sd. sh. drlg.
Standard Oil, No. 74-7-Q, Kettleman North, Kings	7-22-18	8,895	completing
Standard Oil, No. 41-17-Q, Kettleman North, Kings	17-22-18	5,396	sd. sh. drlg.
Standard Oil, No. 61-21-Q, Kettleman North, Kings	21-22-18	7,141	sd. sh. drlg.
Irving, A. R., No. 1 Bisconer, Dudley Ridge, Kings	11-24-20	2,181	sd. sh. drlg.
Caminol Co., No. 3 Allensworth, Tulare	29-24-24	8,230	br. sh. drlg.
Crusaders Oil, No. 1 Muller, Ducor, Tulare	1-24-27	1,331	hd. sd. drlg.
Texas Co., No. 1 Lewis, King City, Monterey	13-19- 5	2,560	br. sh. drlg.
Cal. Pet. Prod., No. 1 Jobe, Elkhorn, San Luis Obispo	6-10-24	2,215	idle
Cal. Pet. Prod., No. 1 Irons, Elkhorn, San Luis Obispo	19-10-24	2,097	hd. sd. drlg.
Lee, H. E., No. 1 Defiance, Elkhorn, San Luis Obispo	7-32-22	196	gr. sd. drlg.
Vanguard Oil, No. 1 Creston, San Luis Obispo	26-27-14	4,979	sd. sh. drlg.
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo	30-12-33	5,080	bailing
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20- 2	2,364	5,395 m.c.f.
Amerada Pet., No. 1 Calif. Lands, Colusa, Colusa	34-16- 1	6,480	gr. sh. drlg.
Richfield Oil, No. 1, Potrero Hills, Solano	10- 4- 1	3,898	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Sovereign Oil, No. 2 Community, El Segundo, L. Ang.	12- 3-15	7,331	completing
Sovereign Oil, No. 1 Coppinger, El Segundo, L. Ang.	12- 3-15	7,195	completing
Rolling Hills Oil, No. 1 Weston, Palos Verdes, L. Ang.	27- 4-14	5,088	idle
Allison & Oglesby, No. 1 Gerner, Torrance, L. Angeles	23- 4-14	5,030	sd. sh. drlg.
Berseid & Clark, No. 1 Basin, Torrance, Los Angeles	23- 4-14	3,783	will deepen

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Blue Bell Pet., No. 1 Simons, Torrance, Los Angeles	23-	4-14	5,240	gr. sd. drlg.
Coastal Counties Oil, No. 6, Torrance, Los Angeles	23-	4-14	2,685	sd. sh. drlg.
Caldale Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,980	flow. 270 b.d.
Collier, P. V., No. 1 Smith, Torrance, Los Angeles	23-	4-14	3,605	will deepen
Consolidated Pet., No. 3 Torrance, Los Angeles	23-	4-14	4,660	sd. sh. drlg.
Cal. Star Oil, No. 1 Whitacre, Torrance, Los Angeles	23-	4-14	4,711	sd. sh. drlg.
Douglas, A., No. 1 Beaudette, Torrance, Los Angeles	22-	4-14	2,992	sd. sh. drlg.
Dunphy, S. R., No. 1 Lomita, Torrance, Los Angeles	23-	4-14	5,002	sd. sh. drlg.
Del Amo Oil, No. 1 Denbo, Torrance, Los Angeles	23-	4-14	4,162	sd. sh. drlg.
Elexico Oil, No. 3 Airey, Torrance, Los Angeles	22-	4-14	4,875	sd. sh. drlg.
Eriksson, G., No. 3 Fortuna, Torrance, Los Angeles	23-	4-14	4,980	sd. sh. drlg.
Falma Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,980	flow 310 b.d.
Fiat Oil, No. 1 Seeple, Torrance, Los Angeles	23-	4-14	4,901	O. S. drlg.
Freeman Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,893	sd. sh. drlg.
Goetz, R. L., No. 1 Monica, Torrance, Los Angeles	23-	4-14	3,997	sd. sh. drlg.
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	3,807	rigged up
Jewel Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,963	sd. sh. drlg.
Jones-Long Oil, No. 2 Torrance, Los Angeles	23-	4-14	4,885	sd. sh. drlg.
Kenber Oil, No. 1 Berken, Torrance, Los Angeles	23-	4-14	4,697	sd. sh. drlg.
Kovell Oil, No. 2 Lomita, Torrance, Los Angeles	23-	4-14	4,810	sd. sh. drlg.
Kovell Oil, No. 3 Lomita, Torrance, Los Angeles	22-	4-14	2,994	sd. sh. drlg.
Kovell Oil, No. 4 Lomita, Torrance, Los Angeles	23-	4-14	1,953	sd. sh. drlg.
Louisiana Oil, No. 1 Lord, Torrance, Los Angeles	22-	4-14	3,800	will deepen
Mildon Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,162	sd. sh. drlg.
Maldum Oil, No. 1 R. K., Torrance, Los Angeles	23-	4-14	5,020	sd. sh. drlg.
Morton & Elder, No. 1 Ritzer, Torrance, L. Angeles	22-	4-14	4,955	flow 480 b.d.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	23-	4-14	3,595	rigging up
McDonald & Burns, No. 10 Moore, Torrance, L. Ang.	22-	4-14	5,005	sd. sh. drlg.
McCaslin, W. E., No. 2, Torrance, Los Angeles	14-	4-14	4,993	pump off
McWherter, C. L., No. 1 Lomita, Torrance, L. Ang.	23-	4-14	4,930	sd. sh. drlg.
M. P. S. Oil, No. 1 Julian, Torrance, Los Angeles	23-	4-14	4,981	sd. sh. drlg.
Moon Oil, No. 2 Julian, Torrance, Los Angeles	23-	4-14	3,787	rigged up
O'Donnell, J. L., No. 42 Lomita, Torrance, L. Ang.	23-	4-14	4,988	rig to pump
Oil Dev., No. 1 Dunphy, Torrance, Los Angeles	23-	4-14	4,852	sd. sh. drlg.
Pennsylvania Oil, No. 1 Lomita, Torrance, L. Ang.	23-	4-14	4,961	P.B. 4,928
Pacific West. Oil, No. 4 Marble, Torrance, L. Angeles	15-	4-14	3,790	will deepen
Pettijohn, J. E., No. 1 Lomita, Torrance, Los Angeles	22-	4-14	2,384	sd. sh. drlg.
Packard Pet., No. 4 Kelley, Torrance, Los Angeles	23-	4-14	4,810	sd. sh. drlg.
Packard Pet., No. 5 Kelley, Torrance, Los Angeles	22-	4-14	4,661	sd. sh. drlg.
Packard Pet., No. 6 Silver, Torrance, Los Angeles	23-	4-14	4,960	flow 420 b.d.
Standard Oil, No. 1-12 Marble, Torrance, L. Angeles	22-	4-14	4,988	flow 960 b.d.
Standard Oil, No. 1-13 Marble, Torrance, L. Angeles	22-	4-14	3,810	rigged up
Star Pet., No. 1 Patton, Torrance, Los Angeles	23-	4-14	4,770	sd. sh. drlg.
Sonwell Oil, No. 4, Torrance, Los Angeles	23-	4-14	4,962	flow 50 b.d.
Silver Strand Oil, No. 2, Torrance, Los Angeles	22-	4-14	4,684	sd. sh. drlg.
Sunny State Oil, No. 1 Bailes, Torrance, Los Angeles	23-	4-14	2,698	sd. sh. drlg.
Ter Heun Oil, No. 1 Lomita, Torrance, Los Angeles	23-	4-14	4,287	sd. sh. drlg.
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14-	4-14	5,026	P.B. 4,992
Imperial Gypsum, No. 1 Pot., Torrance, Los Angeles	14-	4-14	3,747	cleaning out
C. C. M. O. Co., No. 8, Torrance, Los Angeles	15-	4-14	4,699	sd. sh. drlg.
C. C. M. O. Co., No. 16, Torrance, Los Angeles	14-	4-14	5,000	sd. sh. drlg.
Calif. Star Oil, No. 1 Lermens, Harbor City, L. Ang.	25-	4-14	5,298	O. S. drlg.
Calif. Star Oil, No. 1 O'Brien, Harbor City, L. Ang.	25-	4-14	5,295	flow 750 b.d.
Isco Pet., No. 1 Block, Harbor City, Los Angeles	25-	4-14	5,313	sd. sh. drlg.
General Pet., No. 9 Poggi, Harbor City, Los Angeles	30-	4-13	5,116	sd. sh. drlg.
D & B Oil, No. 2 Dawn, Harbor City, Los Angeles	25-	4-14	2,384	sd. sh. drlg.
Bush Oil, No. 1 Gimenez, Harbor City, Los Angeles	25-	4-14	5,135	O. S. drlg.
Silverado Oil, No. 1, Harbor City, Los Angeles	25-	4-14	2,155	sd. sh. drlg.
Union Oil, No. 61 Callender, Dominguez, L. Angeles	32-	3-13	6,780	sd. sh. drlg.
Union Oil, No. 62 Callender, Dominguez, L. Angeles	33-	3-13	8,359	P.B. 5,109
Shell Oil, No. 95 Reyes, Dominguez, Los Angeles	33-	3-13	9,180	P.B. 9,110
Shell Oil, No. 96 Reyes, Dominguez, Los Angeles	33-	3-13	2,050	cmtd. 961
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3-	4-13	4,294	redrig. 4,265
Fairfield, F. E., No. 1 Abel, Rosecrans, Los Angeles	19-	3-13	2,890	cmtd. 982
Exeter Oil, No. 4 Higgins, Rosecrans, Los Angeles	20-	3-13	6,160	sd. sh. drlg.
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles	20-	3-13	3,270	sd. sh. drlg.
Barnsdall Oil, No. 6 Trust, Rosecrans, Los Angeles	18-	3-13	211	sd. sh. drlg.
Union Oil, No. 24 Rosecrans, Rosecrans, L. Angeles	19-	3-13	6,992	sd. sh. drlg.
Union Oil, No. 25 Rosecrans, Rosecrans, L. Angeles	19-	3-13	4,471	sd. sh. drlg.
Universal Cons'd., No. 5 Trust, Rosecrans, Los Ang.	18-	3-13	6,171	sd. sh. drlg.
Republic Pet., No. 1 Trust, Rosecrans, Los Angeles	18-	3-13	6,141	cleaning out
Superior Oil, No. 10 Maxwell, Rosecrans, L. Angeles	20-	3-13	5,365	sd. sh. drlg.
H. B. Oil, No. 1 Stevens, Rosecrans, Los Angeles	20-	3-13	5,033	redrig. 4,260
Tide Wtr. A. O., No. 1 Porter, San Fernando, L. Ang.	27-	3-16	3,830	sd. sh. drlg.
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8-	4-17	1,098	cmtd. fish
General Pet., No. 1 Flint, Wilmington, Los Angeles	33-	4-13	3,500	rigging up
General Pet., No. 39 Harbor, Wilmington, Los Ang.	2-	5-13	3,010	flow 196 b.d.
General Pet., No. 41 Harbor, Wilmington, Los Ang.	2-	5-13	2,060	sd. sh. drlg.
General Pet., No. 45 Harbor, Wilmington, Los Ang.	2-	5-13	3,090	pump 105 b.d.
General Pet., No. 1 P.E., Wilmington, Los Angeles	2-	5-13	4,100	O. S. drlg.
Allied Pet., No. 22 Wilmington, Los Angeles	35-	4-13	4,346	P.B. 4,030
Bankline Oil, No. 12-U.P., Wilmington, Los Angeles	2-	5-13	2,970	flow 395 b.d.
Colter, R. T., No. 6 Colter, Wilmington, Los Angeles	32-	4-13	3,630	flow 310 b.d.
Hancock Oil, No. 24-C, Wilmington, Los Angeles	2-	5-13	4,065	flow 365 b.d.
Hollywood Oil, No. 3 Baxter, Wilmington, L. Angeles	35-	4-13	2,813	sd. sh. drlg.
Hughes, Walter, No. 1 Harbor, Wilmington, L. Ang.	33-	4-13	5,680	swabbing
O'Kane & Brian, No. 3 L.B.H.D., Wilmington, L. Ang.	2-	5-13	2,585	sd. sh. drlg.
Ind. Drlg., No. 1 Vosper, Wilmington, Los Angeles	2-	5-13	2,397	sd. sh. drlg.
Macson Oil, No. 55-4-C, Wilmington, Los Angeles	32-	4-13	2,710	sd. sh. drlg.
Richfield Oil, No. 10-P.D., Wilmington, Los Angeles	2-	5-13	2,650	sd. sh. drlg.
Richfield Oil, No. 27-P.D., Wilmington, Los Angeles	2-	5-13	1,959	sd. sh. drlg.
Richfield Oil, No. 1-G, Wilmington, Los Angeles	35-	4-13	2,040	sd. sh. drlg.
Richfield Oil, No. 1-R.O., Wilmington, Los Angeles	2-	5-13	2,825	sd. sh. drlg.
Richfield Oil, No. 3-P.G., Wilmington, Los Angeles	2-	5-13	3,950	flow 750 b.d.
Royalty Service, No. 7-A, Wilmington, Los Angeles	33-	4-13	4,781	sd. sh. drlg.
Superior Oil, No. 2 School, Wilmington, Los Angeles	2-	5-13	3,030	sd. sh. drlg.
So. Cal. Pet., No. 1-W, Wilmington, Los Angeles	33-	4-13	3,871	sd. sh. drlg.
Union Pacific R. R., No. 82, Wilmington, Los Angeles	4-	5-13	2,660	sd. sh. drlg.
Union Pacific R. R., No. 88, Wilmington, Los Angeles	4-	5-13	2,844	flow 408 b.d.
Union Pacific R. R., No. 90, Wilmington, Los Angeles	3-	5-13	2,615	sd. sh. drlg.
Union Pacific R. R., No. 91, Wilmington, Los Angeles	4-	5-13	1,923	sd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. Ang.	2-	2-12	5,640	deepening
St. Helens Pet., No. 29 Monterey, Montebello, L. Ang.	2-	2-12	3,784	sd. sh. drlg.
St. Helens Pet., No. 2 Eggleston, Montebello, L. Ang.	2-	2-12	5,650	flow 2,004 b.d.
Union Oil, No. 2 Wilcox, Montebello, Los Angeles	2-	2-12	6,254	sd. sh. drlg.
Union Oil, No. 3 Howard & Smith, Montebello, L. A.	2-	2-12	3,520	sd. sh. drlg.
V-8 Oil, No. 1 Estelle, Montebello, Los Angeles	2-	2-12	6,275	cleaning out
West Mon. Oil, No. 2 Seavers, Montebello, L. Angeles	2-	2-12	6,268	flow 940 b.d.
Mon. Wesco, Inc., No. 1 Seavers, Montebello, L. Ang.	2-	2-12	4,692	sd. sh. drlg.
Standard Oil, No. 3 Harvey, Montebello, L. Angeles	2-	2-12	3,987	sd. sh. drlg.
Standard Oil, No. 3 Braun, Montebello, Los Angeles	2-	2-12	2,262	sd. sh. drlg.
Standard Oil, No. 1 Kaufman, Montebello, L. Angeles	2-	2-12	1,580	sd. sh. drlg.
Mont. Res. Oil, No. 1 M. L. & W., Montebello, L. Ang.	2-	2-12	3,297	sd. sh. drlg.
Herley-Kelly, Inc., No. 1 Masser, Montebello, L. Ang.	2-	2-12	4,371	sd. sh. drlg.
Security L. & W., No. 1 Tobey, Whittier, Los Angeles	8-	2-11	2,176	hd. sh. drlg.
Hilldon Oil, No. 4-B-P, North Long Beach, L. Angeles	13-	4-13	4,260	sd. sh. drlg.
Johnston Drlg., No. 34, Long Beach, Los Angeles	13-	4-13	4,552	pump 50 b.d.
Apex Pet., No. 10 Signal, Long Beach, Los Angeles	19-	4-12	3,058	pump 180 b.d.
Texas Co., No. 2-3 Foster, Long Beach, Los Angeles	19-	4-12	5,000	cleaning out
De Soto Oil, No. 1, Long Beach, Los Angeles	30-	4-12	7,351	sd. sh. drlg.
Texas Co., No. 3 Alamitos, Seal Beach, Orange	3-	5-12	5,225	cleaning out
Brea Canyon Oil, No. 48, Brea Canyon, Orange	2-	3-10	5,064	P.B. 4,037
Battersby, J. M., No. 1 Carmenita, Orange	21-	3-11	8,001	hd. sh. drlg.
Severns Drlg., No. 1-A McNally, West Coyote, Orange	24-	3-11	5,600	sd. sh. drlg.
Standard Oil, No. 3 Bastanchury, W. Coyote, Orange	16-	3-10	4,983	sd. sh. drlg.
Shell Oil, No. 1 Cuff, Richfield, Orange	29-	3- 9	3,096	dry; abd.
Shell Oil, No. 1 Kiker, Richfield, Orange	21-	3- 9	1,173	sd. sh. drlg.
Beth Oil, No. 1 Dillingham, Yorba, Orange	21-	3- 9	2,338	P.B. 1,500
A. V. Oil, No. 1, Costa Mesa, Orange	16-	6-10	4,660	cmtd. 3,992
So. Counties Oil, No. 1 Serrano, San Bernardino	22-	2- 8	917	sd. sh. drlg.
Dauphin Dev., No. 1 Irwin, Ponto, San Diego	16-12-	4	69	sd. sh. drlg.

OKLAHOMA

Week Ending September 3

NORTHERN OKLAHOMA

Beckham County

Wagner & Stogner No. 1 McGee, NE NE SE sec. 25-8-22w. O.W.D.D.; T.D. 1,029 ft.; S.G.; S.D.

Coal County

Carter et al No. 1 Mote, C E½ SW NW Sec. 19-2-10. Drlg. 6,295 ft.

Comanche County

E. N. Eldridge No. 1 Aetna Life, SW SE SW Sec. 2-1-10w. Drlg. 765 ft.

Midnite O. & G. Co. No. 1 Howe, NW NW NW Sec. 20-2n-13w. T.D. 550 ft.; S.D.

Clyde Roach No. 1-A Green, SE SE SW Sec. 2-1-13w. T.D. 765 ft.; S.D.

Garfield County

Champlin Ref. Co. No. 1 Boehm, SW SW NE Sec. 4-24-8w. Viola 6,595 ft.; dolo. 6,625 ft.; T.D. 6,650 ft.; rng. csg.

I.T.I.O. No. 1 Kechin, C SE SE sec. 17-22-5w. Miss. 6,113 ft.; T.D. 6,118 ft.; W.O.C.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE Sec. 13-7-8. S.D. at 1,200 ft.

Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. T.D. 1,300 ft.

Phillips Pet. Co. No. 1 Beeker, NE NW SW Sec. 8-5-10. T.D. 6,283 ft.; P.B. 5,603 ft.; W.O.C.

Kay County

Louis Blosser No. 1 Rudolph, NE NE SW Sec. 27-29-1w. T.D. 3,500 ft.; W. O.S.T.

Kingfisher County

Hollenbach & Haley No. 1 Zerger, C SE SW Sec. 5-18-6w. T.D. 2,430 ft.; S.D. for wtr.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Sch. Ld., SE SE SE Sec. 14-6n-17w. S.D. 1,932 ft.

R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. Drlg. 55 ft.

Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; W.O.C.

Lincoln County

British-American No. 1 Markwell, C E½ E½ NE Sec. 26-12-4. Drlg. 5,290 ft.

Indian States No. 1 Bailey, NW NW NE Sec. 2-12-5. T.D. 4,238 ft.; flwd. 18 B. O. in 24 hrs.; swb. 79 B.O. in 4 hrs.

Noble County

H. R. Hollenback No. 1 Mathews, C SW NW Sec. 9-20-1. Drlg. 4,365 ft.

Okfuskee County

Amerada No. 1 Conard, NE NW SW sec. 33-10-10. T.D. 4,068 ft.; S.D.

C. W. Titus No. 1 Lehmar, C NE NE Sec. 26-11-8. Deepened to 3,485 ft.; pmpd. 105 B.O. and 10 B.W. in 24 hrs.

Oklahoma County

Olson Oil No. 1 L. Vaneck, SE SW NW Sec. 4-12-3w. T.D. 6,776 ft.; P.B. 6,766 ft.; W.O.C.

Payne County

Sinclair-Prairie No. 1 McQuain, NE NW NE Sec. 22-19-1. T.D. 5,028 ft.; D.&A.

Pittsburg County

Burk-Greis No. 1 Goodman, NE NE SW Sec. 20-14-7. T.D. 3,025 ft.; S.D.

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2-15. T.D. 1,040 ft.; S.D

Supreme Oil Corp. No. 1 Stevenson, SW SW SE Sec. 27-3-14. Drlg. 1,065 ft.

Pontotoc County

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.; rip in csg.; P.B. 4,090 ft.; S.D.

H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.

Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. T.D. 2,013 ft.; S.D.

Pottawatomie County

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. Rig.

Geo. L. Pace No. 1 Riley, NE NE SE Sec. 2-9-3. Drlg. 3,175 ft.

A. D. Spears No. 1 Vinson, SW NW SW Sec. 29-8-5. Drlg. 3,534 ft.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW Sec. 8-5n-7. Drlg. 2,218 ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 3,660 ft.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,172 ft.; S.D.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No 1 Lee, NE NW SW sec. 2-4s-10e. Arb. 2,843 ft.; S.D. 3,455 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Set 8-in. at 920 ft.; to deepen.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. Sec. 35-6s-2w. T.D. 6,970 ft.; S.D.O.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. Drlg. 2,280 ft.

KANSAS

Week Ending September 3 (Descriptions are East unless marked otherwise)

Barton County

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW Sec. 30-17-13w. U.R. 827 ft.

Crown Pet. Corp. No. 1 Wolf, SE SW SE Sec. 36-19-12w. T.D. 3,374 ft.; pmp. 84 B.O. first 4 hrs.; 84 B.O. second 4 hrs.; pot. 501 B.O.P.D.; comp.

Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. R.U.

Butler County

I. S. Dustin et al No. 1 Warner, SE NW NE Sec. 17-27-5e. O.W.D.D.; T.D. 2,178 ft.; D.&A.

Pryor & Lockhart No. 1 Lietzke, NE SW NW Sec. 24-28-7. Drlg. 2,075 ft.

Simpson Oil No. 1 Equitable Life Ins., SW Sec. 15-25-3. T.D. 3,162 ft.; D.&A.

Soloman & Alexander No. 1 Sawyer, SW NW SW Sec. 2-28-7. Drlg. 175 ft.

Tide Water Oil Co. No. 1 Noel, NE SW Sec. 18-23-5e. Misener 2,386 ft.; Arb. 2,524-50 ft., total depth; D.&A.

Cowley County

Barnsdall Oil Co. No. 1 Elliott, NE cor. Sec. 5-31-5. R.U.

Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. Drlg. 470 ft.

McKnab et al No. 1 O'Neil, NW NW SE Sec. 27-32-3. Drlg. 2,700 ft.

Ellis County

C. B. Davis No. 1 Smith, SW NW NE Sec. 11-12-16w. T.D. 3,391½ ft.; pmp. 78 B.O. first 4 hrs.; 38 B.O. second 4 hrs.; pot. 225 B.O.P.D.; comp.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft.; Wilcox 5,617 ft.; Arb. 5,629 ft.; T.D. 5,930 ft.; P.B. 5,025 ft.; flwd. 56 B.F. in 8 hrs.; S.I.

Graham County

Duwe & Farris and Atlantic Ref. Co. No. 1 Parker, C SE SW Sec. 29-6s-23w. R.U.R.

Greenwood County

Z. Dunalp et al No. 1 Warren, NW NW SW Sec. 4-28-10. Drlg. 1,575 ft.

Fullerton et al No. 1 Bates, NE SW SE Sec. 32-26-11. Spd. and S.D.

Ward McGinnis No. 3 Smith, NW NE NE Sec. 10-24-13. Pay 1,662-65 ft.; est. 15 B.O.P.D.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE Sec. 10-27-10w. T.D. 4,529 ft.; P.B. 4,086 ft.; swbg. 4 B.O.P.H.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. S.D. 2,155 ft.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. Rng. csg. 1,931 ft.
Harwood Oil Co. No. 1 Kaufman, NW NW SE Sec. 27-17-4. Rng. csg. 1,843 ft.

Mead County

Cragin, Reeuscher & Turner No. 1 Adams, NW NW SE sec. 22-34-30w. T.D. 200 ft.; R.U.R.
Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,350 ft.

Ness County

Sinclair-Prairie No. 1 McKinley "A," SW NW Sec. 26-18-26w. S.S.O. at 4,440 ft.; drlg. 4,540 ft.

Norton County

Vickers Pet. Co. No. 1 Bozarth, C SW SW Sec. 15-5-24w. Arb. 3,840 ft.; no shows; D.&A.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. T.D. 2,220 ft.; S.D.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Rig.

Reno County

A. Scherzer No. 1 Krey, SE SW Sec. 19-23-10w. M.I.M.

Rice County

Cities Service No. 1 Flora, SW SW NE Sec. 12-19-10w. T.D. 3,338 ft.; D.&A.
Watchorn O. & G. Co. No. 1 Caldwell, NE SE NE Sec. 29-20-9w. Drlg. 1,885 ft.

Rooks County

Fred Haines et al No. 1 Dorr, SE SE SW Sec. 13-9s-16w. T.D. 3,515 ft.; 1,500 O.I.H. in 6 days.
Producers Oil No. 1 Ham, SW NW sec 25-7-19w. S.D. 1,800 ft.

Russell County

Geo. Hinkle No. 1 Kaufman, SE NW sec 10-15-12w. Arb. 3,171 ft.; T.D.3,201 ft.; H.F.W.; D.&A.
Stearns No. 1 Stielow, NW cor. sec. 32 11-14w. Drlg. 3,476 ft.

Saline County

Sullivan & Sidwell No. 1 Erickson, NE NE Sec. 28-16-3w. S.D. 1,800 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. S.D. 2,355 ft.

Stafford County

Atlantic Ref. Co. No. 1 Wise, NW cor Sec. 13-24-14w. T.D. 3,822 ft.; 1,400,000 ft. gas; acd. and flwd. 4 B.O.P.H.
Newbold & Springrose No. 1 Walker, NE NE SW Sec. 24-24-12w. Cd. to 4,089 ft.; S.D.O.
H. L. Rowley No. 1 Sittner, SE SE NE Sec. 35-21-12w. T.D. 3,575 ft.; pmp. 263 B.O. first 4 hrs.; 206 B.O. second 4 hrs.; pot. 1,230 B.O.P.D.; comp.
Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Drlg. 3,149 ft.

Sumner County

Cameron & Spencer No. 1 Frey, NW cor. Sec. 5-30-1e. R.U.

Thomas County

Ramsey Pet. Co. and John Mabee No. 1 Ryan, C NE SE Sec. 27-8-32w. Drlg. 850 ft.

Wabaunsee County

Fowler & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. Drlg. 145 ft.

Woodson County

Joe Nathan No. 1 Ellis, NW NW SE Sec. 35-25-14. T.D. 1,552 ft.; S.D.

ARKANSAS

Calhoun County

Samuel S. Alexander No. 1 Smythe, C NE NE Sec. 7-11-14. R.U.
C. E. Murdock No. 1 Southern Kraft Corp., SE cor. NW NW sec. 17-14-13. Drlg. sdy. sh. 2,045 ft.

Cleveland County

W. E. Allaum, Tr., No. 1 Moore Est., SW cor. SE NW Sec. 34-9-10. D.&A.; T.D. 3,821 ft.

Columbia County

Atlantic Ref. Co. No. 1 Baker, C SE NW Sec. 13-17-20. Top Tr. Pk. 4,138 ft.; T.C.U. 5,363 ft.; drlg. rd. sdy. sh. 7,132 ft.
Atlantic Ref. Co. No. 1 Baker-Garrett, C SE NE Sec. 14-17-20. M.I.R.
Atlantic Ref. Co. No. 1 Harrington, C SW NW Sec. 14-17-20. Drlg. rd. sdy. sh. 7,286 ft.
Pet. Finance Co. No. 1 Baker, C SW NW Sec. 13-17-20. Drlg. rd. sdy. sh. 7,513 ft.
Standard Oil Co. of La. No. 1 T. Crumpler, sec. 15-17-19. Cg. 7,447 ft.; top por. oolitic L. 7,380 ft.; flwd. 34 B.P. H. fluid; ¾-in. ck.; 33% S.W.; C.P. 1,100 lbs.; T.P. 730 lbs.; killed well and set cmt. retainer 7,395 ft. and sqzd.; T.D. 7,500 ft.; sqzd. at 7,395 ft.; drld. out to 7,409 ft. and perf.; flwd. 50 to 65 B.P.H. fluid, 50 to 95% S. W.; killed and arng. sqze.
Standard Oil Co. No. 1 E. D. Harris. Drk.
Standard Oil Co. of La. No. 1 J. L. Warren, Sec. 18-16-22. Set 13⅜-in. csg. 197 ft.; drlg. L. 3,429 ft.
G. H. Vaughn No. 1 Garrett. C NE SE Sec. 14-17-20. T.C.U. 5,365 ft.; drlg. rd.&gr. sh. 6,570 ft.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 580 ft. N line, 80 ft. E line, sec. 35-14n-3e. M.I.C.T. 1,754 ft.

Crittendon County

Stanley Oil Corp. No. 1 Danner hrs., O.W.W.O.; old T.D. 2,790 ft.; rng. 4-in. csg. to set on bttm.; will use 1 ft. perf. csg. 3,219-3,176 ft.; T.D. 3,351 ft.; rng. 4-in. csg.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.
Clark et all No. 1 Strawn, SW cor. SE Sec. 20-10-32. 10-in. csg. 63 ft.
M. E. Sanderson No. 1 Pinny; O.W.W.O.; reported abd. 1,300 ft.; NE cor. NE SW sec. 6-13-30. S.D. 1,324 ft.
Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D. 3,354 ft.

Lonoke County

J. F. Russell No. 1 J. T. Gunter, SE cor. Sec. 17-5-10. Drlg. 1,218 ft.

Miller County—Rodessa

Gerhig No. 2 Mitchell, SW SE Sec. 2-21-28. Drlg. anhy.&sh. 5,914 ft.
Red River Valley Oil Co. No. 1 Beck, Sec. 34-15-26. T.D. 3,008 ft.; reperf. 2,786-2,808 ft.; set pkr. 2,806 ft.; tbg. stk. on pkr.

Nevada County

Paul D. Bowlen No. 1 Stocks, C NW SE Sec. 9-15s-22w. Top Jones L. 2,980 ft.; drlg. limey sh. 3,595 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. S.D. 905 ft.
A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW Sec. 2-1s-13e. S.D. 3,388 ft.

Union County—Schuler

Atlantic Ref. Co. No. 2 Dumas, SE cor. NE NW Sec. 21-18-17. Drlg. 4,100 ft.
Crescent Drlg. Co. No. 1 Lewis, SE SW Sec. 16-18-17. Drlg. rd. sdy. sh. 7,546 ft.
Crescent Drlg. Co. No. 1 Sewell, SW cor. NE NE Sec. 12-18-18. Set 13⅜-in. csg. 116 ft.; drlg. 2,310 ft.
Delta Drlg. Co. No. 1 Powledge, SW cor. NW NW Sec. 21-18-17. R.U.
E. M. Jones No. 1 Gallagher, Lot 4, NW SW Sec. 18-18-17. O.W.W.O.; old T.D. 5,929 ft.; drlg. rd.&gr. sh. 6,883 ft.
E. M. Jones No. 1-B Murphy Ld. Co., Sec. 13-18-18. O.W.W.O.; old T.D. 5,987 ft.; wsg. to bttm.
Lion Oil Ref. Co. No. 2 Clarence, Lot 1, SW Sec. 7-18-17. Drlg. rd.&gr. sh. 5,876 ft.
Lion Oil Ref. Co. No. 2 Dee, SW cor. SE NW Sec. 17-18-17. Drlg. rd.&gr. sh. 5,900 ft.
Lion Oil Ref. Co. No. 4 Marcus, NW cor. Lot 3, SW Sec. 18-18-17. Top Jones sd. 7,543 ft.; top L. 7,638 ft.; 7-in. at 7,727 ft.; T.D. 7,735 ft.; comp.; 1,368 B.P.D.; 20/64-in. ck.; T.P. 775 lbs.; C. P. 975 lbs.; perf. 7,575-95 ft.
Lion Oil Ref. No. 4 Marine, NE cor. SE SE Sec. 17-18-17. Drlg. 3,070 ft.
Lion Oil Ref. Co. No. 5 Marine, SE cor. NE SE Sec. 17-18-17. R.U.
Lion Oil Ref. Co. No. 2 Marvin, SE cor. Lot 1, SW Sec. 7-18-17. Cd. top Jones sd. 7,608 ft.; T.D. 7,653 ft.
Lion Oil Ref. No. 6-A Morgan, SE cor. Lot 1, SW Sec. 18-18-17. Set 7-in. csg. 7,692 ft.; T.D. 7,700 ft.
Lion Oil Ref. Co. No. 1 Natl., NW cor. NE SW Sec. 17-18-17. Top Jones sd. 7,544 ft.; T.D. 7,630 ft.; set 7-in. csg. 7,620 ft.; W.O.C.
Lion Oil Ref. Co. No. 2 Nelson, Lot 5, Sec. 18-18-17. Cg. 7,543 ft.
Lion Oil Ref. Co. No. 1 H. P. Sewell, NE cor. Lot 4, NW Sec. 18-18-17. Top Jones sd. 7,539 ft.; cg. 7,644 ft.
Marine Oil Co. No. 2 J. H. Calloway, NW cor. E½ SE NE sec. 13-18-18. Set 16-in. csg. 142 ft.; T.D. 6,348 ft.; fsg. drill collar.
Phillips Pet. Co. No. 1-B Bryan, NW cor. NE SE Sec. 13-18-18. Set 10¾-in. csg. 1,708 ft.
Phillips Pet. Co. No. 1 El Dorado Bnk., SW cor. NW SE Sec. 12-18-18. R.U.
Phillips Pet. Co. No. 2 Gan, NE cor. SE NE Sec. 18-18-17. Drlg. 4,315 ft.
Phillips Pet. Co. No. 1 Milling, SE cor. S½ Lot 4, SW Sec. 18-18-17. R.U.; W.O.
Phillips Pet. Co. No. 1 Miller, NE cor Lot 4, SW Sec. 18-18-17. Top L. 7,635 ft.; T.D. 7,734 ft.; 7-in. csg. 7,708 ft.; comp.; 715 B.P.D.; 24/64-in. ck.; T.P. 1,100 lbs.; C.P. 1,150 lbs.; perf. 7,580-7,614 ft.
Phillips Pet. Co. No. 1 Sewell, SW cor Lot 5, SW Sec. 7-18-17. Top L. 7,632 ft.; T.D. 7,725 ft.; 7-in. 7,700 ft.; comp.; 361 B.P.D.; ¼-in. ck.; T.P. 300 lbs.; C.P. 1,200 lbs.; perf. 7,570-98 ft.
Phillips Pet. Co. No. 2 Sewell, Lot 3, SW Sec. 7-18-17. Drlg. 4,008 ft.
Phillips Pet. Co. No. 3 Sewell, Lot 5, SW Sec. 7-18-17. Drlg. 3,682 ft.
Phillips Pet. Co. No. 4 Sewell, Lot 4, SW Sec. 7-18-17. Drlg. 4,717 ft.
Roberts & Murphy No. 2 Leona, NW cor. Lot 6, SW Sec. 7-18-17. Drlg. 6,368 ft.

Union County—Other

J. R. Lockhart No. 1 Raulston, sec. 12-17-14. Cd. oil sd. 3,160-75 ft.; D.S.T. 3,172-75 ft.; rec. drlg. fluid and S.W.; cd. 3,175-85 ft.; S.O.; salty taste; set 7-in. csg. 3,077 ft.; perf. 3,002-07 ft.; tstd. 2,750 ft. S.W.; reperf. 2,967-73 ft.; blew wild; est. 500 bbls. S.W.; P.B. 2,700 ft.; drld. out cmt. 2,980 ft.; perf. 2,968-76 ft.; set pkr. 2,960 ft.; tstd. 1,500,000 ft. gas; connecting up separator 2,980 ft.
J. R. Lockhart No. 2 Raulston, NE cor. SE Sec. 12-17-14. 10-in. 108 ft.; S.D.; boiler repairs; 1,576 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

DeSoto O. & G. Co. No. 1 Fleming, C NW NW Sec. 18-16-9. Drlg. 5,350 ft.
Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec. 23-15-10. R.U.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. Sec. 10-22-11. S.D. 635 ft.
C. H. French No. 1 Weaver, sec. 14-19-11. W.O.C. 377 ft.
Premier Inv. Co. No. 1 Community Corp., sec. 22-19-11. S.D. 310 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Tstd. est. 1,000,000 ft. gas; S.I.; T.D. 2,374 ft.; top oolitic L. 2,345 ft.; set 5½-in. csg. 2,300 ft. without cmt.; set 7-in. csg. 2,026 ft. without cmt.; tstd. est. 1,000,000 ft. gas, S.S.O.; W.O.S.R. 2,384 ft.
J. B. Stovall et al No. 2 Ark. Fuel Oil Co. fee, NE SE Sec. 15-19-11. Set 6-in. 168 ft.; W.O.S.R. 372 ft.
J. B. Stovall et al No. 3 Ark. Fuel Oil Co. fee, NE SE Sec. 15-19-11. Drlg. sh. 325 ft.
Triangle Drlg. Co. No. 1-A R. O. Roy, SW cor. NW Sec. 18-17-11. Tstd. S.W. S.S.O. 3,125 ft.; P.B. 3,093 ft. and perf. 3,080-85 ft.; recmtd. csg.; T.D. 3,093 ft.; old T.D. 3,148 ft.; drld. out cmt. 3,121 ft.; swbd. S.S.O.; rocked with gas; no result; arng. acd.

Caddo Parish

J. W. Bailey No. 2 Caddo Lvy. Bd., SE cor. Sec. 36-21-16. R.U.
F. W. Burford No. 2 Brown, C SE SE Sec. 5-23-15. Drlg. sh. 1,730 ft.
J. E. Carroll et al No. 1 Stiles, SW cor. NE Sec. 17-21-16. Set 6-in. csg. 1,481 ft.; W.O.C.
Carney et al No. 1 Hart; O.W.W.O. Old T.D. 2,372 ft.; repair rig.
S. H. Cassidy No. 1 Caddo Lve. Bd. Drlg. plug 1,331 ft.
W. D. Chew No. 5 Stiles, SW cor. Sec. 27-21-16. Cg. 1,025 ft.
Paul Cooper et al No. 1 Stiles, SE cor. NE NW Sec. 33-21-16. T.D. 1,712 ft.; acdz. with 3,000 gal.
Tony DeGrazier No. 1 Welsh, NE cor. Sec. 3-20-16. 7-in. csg. 925 ft.; T.D. 961 ft.
Falcon Oil Co. No. 2 Glassell-Youree, SE cor. Sec. 26-20-15. Tstd. dry; S.O.&S. W.; will acdz.; T.D. 2,306 ft.
M. M. Ferrell No. 1 Dyer. Sec. 10-20-16. Drlg. sh. 960 ft.
C. G. Gibbons No. 1 Helpman, SW cor. Sec. 16-21-16. Cg. 997 ft.
J. T. Humphrey No. 2 Caddo Lve. Bd. Sec. 26-21-16. Tstg. 1,011 ft.
McClanahan et al No. 1 Muslow, NE NW sec. 31-21-15. Set 10¾-in. csg. 40 ft.; S.D.
E. W. McGoldrick No. 9 Muslow, SW cor. Sec. 32-21-15. Tstg. 1,567 ft.
Manzell No. 1 Ramsey, SE cor. Sec. 32-21-15. Drlg. 155 ft.
F. W. Martin and Superior Oil Corp. No. 1 Querbes, Sec. 8, Reg. Sec. 20-17-13. R.U.
Midfield Oil Co. No. 7 Muslow, Sec. 6-20-15. Recmtd. 7-in. 1,324 ft.; T.D. 1,560 ft.; comp.; pmp. 10 B.P.D.; pmp. 3,000 gal. oil.
J. Ober & Sons No. 1 fee, SE cor. sec. 36-21-16. Set 8-in. csg. 1,495 ft.
Oils, Inc., No. 1 Cazaux, sec. 10-16-13. Fsg. D.S. 3,200 ft.
Papadokis & Poppas No. 1 Spell. Set 7-in. csg. 1,395 ft.; tstd. S.W.&S.O. 1,700 ft.; arng. P.B.
J. E. Sedberry No. 1-A Dickinson, SW cor. sec. 10-19-14. Drlg. 2,410 ft.
Southern Star Pet. Corp. No. 1 Muslow, SE NW sec. 17-20-15. O.W.W.O.; old T.D. 1,500 ft.; set 8-in. csg. 1,350 ft.; T.D. 1,860 ft.; W.O.S.R.
Southern Star Pet. Corp. No. 2 Muslow, NE cor. SE NW sec. 17-20-15. Drlg. 1,961 ft.
Nat Wiseman No. 4 Stiles. T.D. 1,035 ft. comp.; pmp. 30 B.P.D.

Caldwell Parish

E. T. Oakes et al No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. Set 12-in. csg. 467 ft.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. Drlg. sh. 1,300 ft.

Claiborne Parish

Harry Fotiades No. 1 T. H. Lloyd, C SE SE Sec. 10-20-5. Drlg. 4,670 ft.
Harry Fotiades No. 2 Rogers, C SW NW Sec. 13-20-5. Sat. L. 5,319-22 ft. and 5,325-33 ft.; set 5½-in. csg. 5,311 ft.; W.O.C.; T.D. 5,339 ft.
J. H. Henry No. 1 McDonald, NE cor SE Sec. 3-20-5. 5½-in. csg. 5,342 ft.; perf. csg. 5,296-5,322 ft.; swbg.
Magnolia Pet. Co. No. 4 Sallie Lloyd, SE cor. Sec. 2-20-5. Drlg. sh.&L. 5,200 ft.
W. H. North No. 1 Lowery, C NE NW Sec. 14-20-5. D.&A. 5,327 ft.
Oakes et al No. 1 Kilgore, NE cor. SE sec. 28-21-15. D.S.T. 4,188-4,225 ft.; tstd. dry in 5 min.; set 5¾-in. csg. 5,290 ft.; T.D. 5,313 ft.; set perf. lnr.; tstd. dry; washed with oil and acds. with 2,000 gal. and 150 bbls. oil; swb. dry; think csg. seat gave away; recmt. csg.; cor. depth 5,270 ft.; cor. T.D. 5,357 ft.; W.O.
H. O. Olson No. 1 L. L. Lowery. R.U. S.D.
Rodessa O. & R. Co. No. 2 Lloyd, C NE SW Sec. 10-20-5. Set 10¾-in. csg. 787 ft.; W.O.C.
Sklar Oil Corp. No. 1 Lowery, C SW SW Sec. 14-20-5. W.O. 5,340 ft.
Union Prod. Co. No. 1 Hodges, Sec. 6-19-15. Drlg. L.&sh. 5,309 ft.

Concordia Parish

Edw. Addy et al No. 1 Posternack, NW SW Sec. 49-8n-9e. Arng. D.S.T. 1,382 ft.
Morrison & Co. No. 1 Winston sec 4-7-9e. Whipstock 2,000 ft.; drlg. brkn. sh. 4,107 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec. 5-12-16. S.D. 1,872 ft.
G. H. Collins et al No. 2 Joiner, sec. 28-11-12. W.O.C. 2,925 ft.
Paul Miller et al No. 2 Jal Drlg. Co., NE Sec. 5-11-11. S.D.; contract depth 4,000 ft.
Petroleum Heat & Power Co. No. 2 Kavanaugh. NE cor. NW SW sec. 7-11-11. Tstd. dry 2,874 ft.; W.O.
Pet. Heat & Power Co. No. 1 Rives, sec. 20-12-11. S.D. 3,620 ft.
A. L. Sutton No. 1 Frost Lbr. Co., C NE SE Sec. 35-11-15. R.U. and S.D.

Grant Parish

C. R. Bowers No. 1 Harrison Est., sec 21-8-5. Drlg. sd. sh.& glauconite 1,580 ft.
Luther Terrill et al No. 1 Barnett, C SW SW Sec. 19-9-1e. R.U.

La Salle Parish

O. L. Black No. 1 Tullas. Set 6-in. csg. 1,493 ft.; T.D. 1,495 ft.

Madison Parish

Continental Oil Co. No. 1 Singer Mfg. Co., C NE NW Sec. 3-15-11e. Ch. rk. 650-2,227 ft.; igneous 2,227-2,508 ft.; drlg. rd. sdy. sh. 3,520 ft.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., sec. 36-7n-9w. S.D. 510 ft.

Red River Parish

J. F. Lent No. 1 Chicago Coal & Ld. Co., SE cor. Sec. 17-13-11. O.W.W.O.; D.D. 1,491 ft.
J. C. Prine No. 2 Haynes, SW cor. Sec. 20-13-10. Set 10-in. csg. 85 ft.; 8¼-in. 1,128 ft.; W.O.S.R. 1,398 ft.
H. J. Rogers No. 1 Raney, SW cor. Sec. 20-13-9. Drlg. sh. 650 ft.

Sabine Parish

Addison & Peterson No. 1 Dew, SE cor. SW SE Sec. 22-8-11. Drlg. 2,210 ft.
A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. R.U.
Hunter Co. No. 6 Bowman & Hicks, S.D.; comp.; 700 B.P.D.; 6-in. csg.; T. D. 2,490 ft.
LeGrande & Brown No. 1 Tatum, NE cor. NW NE Sec. 17-8-13. Drlg. sh. 1,490 ft.
W. L. McClanahan No. 1 Frost Lbr. Co., sec. 22-9-13. D.S.T. 2,927-3,028 ft.; tstd. est. 1,000,000 ft. gas and 9 jts. mud; ¼-in. ck.; blew out 4,745 ft.; S.W., mud and gas; cd. hd. sh.&L. 4,745-54 ft.; tstd. S.O. and used 3,000 gal. acd.; reacd. with 3,000 gal. 1,616 ft.
Major Oil Co. No. 1 Loring, C SE NW Sec. 21-7-13. Top clk. 2,265 ft.; arng.

acd. with 8,000 gal.; 8-in. csg. at 2,272 ft.; T.D. 2,331 ft.
H. L. Nutting No. 1 4-L Co., C NE NW Sec. 24-7-11. Drlg. sh. 2,448 ft.
Geo. L. Pace No. 3 Logan Oil Co., SW NW Sec. 26-10-13. R.U.
W. L. Posey No. 2 Hale, SE cor. NE NW Sec. 12-7-13. Recmtd. csg.; T.D. 2,577 ft.
Richards & Holloway No. 1 Bowman Hicks, Sec. 11-7-13. Arng. test 2,404 ft.
Richards & Holloway No. 1 Hale, C NE NE Sec. 12-7-13. Set 5½-in. csg. 2,078 ft.; W.O.C. 2,078 ft.
Richards & Holloway No. 1 Long Bell, C NW NE Sec. 15-7-13. R.U.
Richards & Holloway No. 1 Sabine Lbr. Co., NE NW Sec. 7-7-12. O.W.W.O.; drlg. 2,778 ft.
C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft. will P.B. 2,590 ft.
H. M. Sneed No. 1 Leone, 330 ft. S line, 400 ft. W line, NW SE sec. 8-7-13. R.U.
Tropical Oil Co. No. 1 Long Bell Lbr. Co., Sec. 5-8-13. T.D. 2,178 ft.; S.D.; W.O.
Zwolle Synd. No. 1 Mansfield Lbr. Co Sec. 8-7-19. T.D. 4,323 ft.; arng. set 5-in. csg.

Webster Parish

Hunt Oil Co. No. 8 Babb, sec. 13-21-10 Top Bodcaw sd. 8,255 ft.; drlg. sdy. sh. 8,767 ft.
Hunt Oil Co. No. 2 Bodcaw Lbr. Co., NE cor. Sec. 33-21-10. 2nd Holloway sd. 5,720-25 ft.; perf. 5,705-30 ft.; 9⅝-in. csg. 5,953 ft.; comp.; 15 B.P.H.; 21/64-in. ck.; T.P. 375 lbs. C.P. 900 lbs.; T.D. 5,960 ft.
Hunt Oil Co. No. 3 Bodcaw-Stewart, C NW SW Sec. 34-21-10. Holloway sd. 5,822-46 ft.; 9⅝-in. csg. 5,951 ft.; perf. 5,815-50 ft.; tstd. S.O.&G.; C.P. 500 lbs.; T.P. 0 lbs.; reperf. 5,815-50 ft.; swbg.; T.D. 5,956 ft.
Hunt Oil Co. No. 2 Davis Unit, C NW NW Sec. 24-21-10. Set 13⅜-in. 652 ft.; W.O.C. 665 ft.
Hunt Oil Co. No. 20 Hope, C NE NW sec. 24-21-10. Top Holloway sd. 5,596-5,604 ft.; set 9⅝-in. csg. 5,580 ft.; did not test Holloway sd. top Bodcaw sd. 8,165 ft.; top Davis sd. 8,479 ft.; fsg. D.S.; T.D. 8,487 ft.
Hunt Oil Co. No. 21 Hope, C NE SW Sec. 13-21-10. Drlg. sh. 5,375 ft.
Hunt Oil Co. No. 1 Pardee, sec. 24-21-10. Set 13⅜-in. csg. 797 ft.; drlg. sh. &L. 7,310 ft.
Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Holloway sd. yet; set 9⅝-in. csg. 5,730 ft.; drlg. sh.&L. 6,140 ft.
Magnolia Pet. Co. No. 4 Cox, sec. 23-21-10. W.O.C. 5,819 ft.; tstd. dry 5,795-5,810 ft.; shot formation 5,795-5,805 ft. with 10 qts. nitro and bailed 8 bbls. oil with gas-lift in 24 hrs.; T.D. 5,819 ft.; D.&A. 5,819 ft.
Magnolia Pet. Co. No. 1 Merritt Unit, C SW NW Sec. 14-21-10. Fsg. D.S. 5,710 ft.
Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. Rmd. and set 9⅝-in. csg. 5,920 ft.; T.D. 6,025 ft.; swbd. dry; will pull tbg. and acdz.
Midstates Oil Corp. No. 1 Welori Lbr. Co. Unit, NE cor. NW sec. 3-20-10 Drlg. sh. 4,870 ft.
Harry Morgan No. 2-A Hope, C SE SW Sec. 24-21-10. Drlg. sdy. sh. 7,422 ft.
North American Oil Consol. Co. No. 1 Barrow, C NE NW sec. 21-21-10. Top Trv. Pk. 5,889 ft.; set 9⅝-in. 5,945 ft.; no Holloway sd.; D sd. 8,555-73 ft.; csg. 8,665 ft.; T.D. 8,725 ft.; tstd. est. 30 bbls. fluid per hr. on ¼-in. ck.; T.P. 500 lbs.; C.P. 900 lbs.; est. 750,000 ft. gas per day; est. 3 to 6% S. W.; arng. P.B.
Ohio Oil Co. No. 1 W. Cox, Acct. 2, SE cor. SW Sec. 15-21-10. Set 13⅜-in. csg. 817 ft.; T.D. 1,690 ft.
Oliphant Oil Corp. No. 1 Fred Banks, C SE NW Sec. 2-20-10. Drlg. sh. 2,323 ft.
Oliphant Oil Corp. No. 1-B Stewart, C NW NE Sec. 5-20-10. Top Tr. Pk. 6,117 ft.; Holloway sd. 6,160-67 ft.; 9⅝-in. csg. 5,884 ft.; drlg. sh. 6,643 ft.
Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. Drlg. sh. 2,882 ft.
Union Prod. Co. No. 2 Stewart, SW SW Sec. 28-21-10. 10¾-in. csg. 746 ft.; T. D. 2,206 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 2 J. A. Brookshire, sec. 66-12s-3e. T.D. 7,902 ft.; 6-in. csg. 7,902 ft.; tstd. S.W. and sd. perf. csg. 7,892-95 ft.; tstd. oil and S.W.; sqzd. off perf.; reperf. csg. 7,889-93 ft.; tstd. S.W. and oil; perf. csg. 7,875-83 ft.; I.P. 136 B.P.D.; 5/32-in. ck.
Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. Drk.

Anse La Butte—St. Martin Parish

Louisiana-Crusader No. 3 Central Oil Co., sec. 86-9s-5e. S.D. 421 ft.
Paul Fly et al No. 1 Moresi Oil Co., Sec. 118-9s-5e. Cg. sd.&sh.; O.S. 1,429 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, sec. 21-16s-12e. S.D. 9,576 ft.

Baton Rouge—East Baton Rouge Parish

Wm. Helis et al No. 2-A La. State University, Sec. 66-7s-1w. Drlg. L. 6,090 ft.
Wm. Helis No. 1 Harry Nelson, sec. 36-7s-1w. Cd. oil sd. 6,477-6,500 ft.; T.D. 7,710 ft.; D.P. stk.; P.B.; sdtrkd.; drlg. L. 5,551 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 4 State-Bay St. Elaine, Sec. 19-23s-20e. Drlg. sdy. sh. 4,389 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 8 Wilberts, Sec. 66-9s-11e. R.U.

Bayou Choctaw—West Baton Rouge

La. Crusader Oil Co. No. 3 Schwing, sec. 29-8s-11e. Drlg. L.&shell 7,758 ft.
Standard Oil Co. et al No. 1 Marley Cypress Co., Sec. 29-8s-11e. Drlg. sh.&L. 7,483 ft.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,021 ft.; D.P. stk.; P.B. to 5,000 ft.; sdtrkd. at 5,000 ft.; drld. to 6,984 ft.; 9⅝-in. csg. 6,982 ft.; drlg. sh. 7,165 ft.
Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. T.D. 8,500 ft.; 9⅝-in. csg. 8,518 ft.; drlg. sh. 9,185 ft.

Big Lake—Cameron Parish

Union Sulphur Co. No. 1 Hebert, Sec. 18-12s-8w. Drlg. sh. 9,571 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Loc.
Texas Co. No. 29 State, sec. 17-23s-20e. Rig.
Texas Co. No. 53 State, Sec. 18-23s-20e. Drlg. sh. 4,816 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co., Sec. 16-14s-13w. Drk.
Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and sanded up; S.D.
Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. 9⅝-in. csg. 4,242 ft.; T.D. 6,367 ft.; P.B. 3,830 ft.; perf. csg. 3,777-97 ft.; flwd. 80 bbls. fluid, 80% S.W.; killed well; perf. csg. 3,782-90 ft.; I.P. 100 bbls. fluid, 30% S.W.; pmpg. and flwg.
Magnolia Pet. Co. No. 23 Cameron Meadows, sec. 21-14s-13w. Drk.

Charenton—St. Mary Parish

Kinsley Oil, Inc., No. 2 Hertel, sec. 21-13s-9e. T.D. 1,133 ft.; 7-in. csg. 1,112 ft.
Pan American Prod. Co. No. 9 Laws Realty Co., sec. 31-13s-10e. T.D. 7,209 ft.; P.B. 4,000 ft.; T.D. 6,762 ft.; 7-in. csg. 6,762 ft.
Pan American Prod. Co. No. 9 Veeder, Sec. 11-13s-9e. T.D. 1,841 ft.; 7-in. csg. 1,830 ft.; tstd. S.W.; dpnd. to 1,905 ft.; tstd. S.W.; P.B. 1,836 ft.; W.O.S.R.
Pan American Prod. Co. No. 10 Veeder, Sec. 11-13s-9e. Loc.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 3 State-Gulf of Mexico. T.D. 2,458 ft.; S.D. acct. of storm.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 5,750 ft., stky. sh., S.D.
Humble O. & R. Co. No. 1-B Community, Sec. 49-10s-2e. T.D. 7,930 ft.; P.B. 4,416 ft.; drld. out to 4,431 ft.; 5½-in. csg. on bttm.; perf. csg. 4,350-62 ft.; tstg.
Humble O. & R. Co. No. 14 Gumbel, Sec. 33-10s-2e. T.D. 7,017 ft.; abd.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.
Southern Drillers, Inc. (D. J. Simmons) No. 1 August Berteau, sec. 55-10s-2e. T.D. 7,744 ft.; 5½-in. csg. 7,684 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Driving piling.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. Drlg. sh. 8,922 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, sec. 40-17s-15e. T.D. 10,557 ft.; make D.S.T.

Garden Island—Plaquemines Parish

Texas Co. No. 28 State, sec. 100-23s-38e. Top salt 6,775 ft.; T.D. 6,777 ft.; salt; S.D.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 2 Grand Prairie Lve., sec. 48-20s-18e (1,320 ft. W of No. 1). Drlg. sd. 5,704 ft.
Gulf Ref. Co. No. 1 State-QQ, Sec. 6-20s-19e. Loc.

Hackberry—Cameron Parish

Berry Oil Corp. No. 1 Cora E. Lyons, sec. 28-12s-10w (West Hackberry). T.D. 3,535 ft.; 7-in. csg. 3,445 ft.; perf. csg. 3,375-82 ft.; W.O.S.R.
Darryl Davis No. 1 Bickford, sec. 30-12s-10w. T.D. 2,873 ft.; top sh., L., and brkn. cap; S.O. 2,792 ft.; 5-in. csg. 2,778 ft.; T.D. 2,873 ft.; cleaned hole; set cmt. retainer at 2,765 ft.; drld. out to T.D. 2,877 ft.; tstg.
Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. T.D. 3,201 ft.; P.B. 2,830 ft.; W.O.C.; to sdtrk. jnk.; fsg.; P.B. 2,830 ft.; sdtrkd. 1,121 ft.; drlg. sdy. sh. 2,326 ft.
Stanolind O. & G. Co. No. 1 Carter, sec. 22-12s-10w. R.U.
Superior Oil Co. No. 3 Benson Vincent, Sec. 30-12s-10w. T.D. 6,632 ft.; run 7-in. csg. 6,583 ft.; I.P. 492 B.P.D.; 14/64-in. ck.
Superior Oil Co. No. 1-C Dorrisse, Sec. 30-12s-10w. R.U.R.
Texas Co. No. 24-B State, sec. 12s-9w T.D. 8,052 ft.; sdtrkd.; drlg. sh. 8,112 ft.
Union Sulphur Co. No. 7 Hanzen, sec. 13-12s-10w. Drlg. sdy. L. 4,005 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, sec. 37-17s-9e Drlg. sh. 8,860 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. T.D. 10,645 ft.; milling to sdtrk. stk. D.P.; sdtrkd. 10,253 ft.; S.D. 10,615 ft.

Jefferson Island—Iberia Parish

Texas Co. No. 1 State-Lake Peigneur Twp. 12s-5e. Top salt 3,642 ft.; base salt 3,741 ft.; drlg. sh. 5,382 ft.

Jennings—Acadia Parish

Frank Bennett No. 1 Freeman & Carden, Sec. 45-9s-2w. T.D. 5,767 ft.; 7-in. csg. 5,767 ft.
W. T. Burton No. 6 Roboria, sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.
Cosmo Pet. Co. No. 1 Jennings-Clement, sec. 46-9s-2w. T.D. 3,552 ft.; sdtrkd.; T.D. 3,581 ft.; S.D.
Frio Oil Co. No. 2 Gulf fee, sec. 45-9s-2w (NW flank). 10¾-in. csg. 1,512 ft. drlg. sd.&L. 5,614 ft.
Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 6,687 ft.; P.B. 4,300 ft. T.D. 6,170 ft.; twisted off drill collar; fsg.; sdtrkd. 5,550 ft.; drlg. sh.&L. 6,043 ft.
Glassell & Glassell No. 5 Trushell, sec. 42-9s-2w. T.D. 7,250 ft.; 7-in. csg. 7,153 ft.; I.P. 531 B.P.D.; 14/64-in. ck.
Glassell & Glassell No. 6 Trushell, sec. 42-9s-2w. Drlg. sh. 1,939 ft.
Guaranty Oil Co. No. 1 Rowson & Haber, Sec. 46-9s-2w. Drlg. sh. 1,231 ft.
Gulf Oil Corp. No. 40 Arnaudet, sec. 48-9s-2w. Spd. 60 ft.
L. & L. Oil Co. No. 2 Houssiere Latreille, Sec. 47-9s-2w. R.U.R.
W. S. Noble et al No. 1 Ed Prather, sec. 45-9s-2w. 7-in. csg. 7,450 ft.; T.D. 7,456 ft. (cor.); perf. csg. 7,405-45 ft.; tstg.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,995 ft.; P. B. 1,774 ft.; tstd. S.W.; S.D.
Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. T.D. 2,167 ft.; P. B. 1,595 ft.; 5½-in. csg. 1,585 ft.; S.D.
Shell Pet. Corp. No. 4 Community, sec. 40-9s-2w. Cg. sd. 6,334 ft.
Stanolind O. & G. Co. No. 112 Crowley Oil & Mineral Co., sec. 48-9s-2w. T.D. 6,838 ft.; P.B. 4,890 ft.; to sdtrk.; T.D. 7,079 ft.; fsg.
Superior Oil Co. No. 4 Clement, sec. 46-9s-2w. T.D. 6,546 ft.; 7-in. csg. 6,494 ft.; flwd. oil; started making gas; killed; well P.B.
Superior Oil Co. No. 7 Jennings-Hey wood, Sec. 41-9s-2w. Drlg. salt 5,167 ft.
Superior Oil Co. No. 8 Jennings-Haywood, Sec. 41-9s-2w. Drk.
Three Sands Oil Co., Sec. 46-9s-2w. Drlg. 100 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,255 ft.; prep. to sdtrk.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien Adams, Sec. 9-17s-24e. Drlg. gbo. 650 ft.
Texas Co. No. 12 LaFitte, Sec. 20-17s-24e. Loc.
Texas Co. No. 3 Madison Realty Co., sec. 17-12s-24e. T.D. 10,120 ft.; run csg.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. Drlg. sh.&L. 9,077 ft.
Texas Co. No. 10 Rigolet Cooperative Fur Co., Sec. 28-17s-24e. Drlg. sdy. sh. &L. 6,166 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 16 State, sec. 32-21s-19e. T.D. 4,280 ft.; P.B. 2,734 ft.; sd. S.O.; top sd. 3,833 ft.; T.D. 4,173 ft.; P.B. 3,600 ft.; sdtrkd.; T.D. 4,140 ft.; perf. csg. 3,790-3,830 ft. and 3,940-90 ft.; tstd. mud; abd.
Texas Co. No. 42 State-Lake, sec. 40-21s-19e. Drlg. sdy. sh. 9,975 ft.; no report.

Lake Pelto—Terrebonne Parish

Texas Co. No. 21 State, sec. 8-23s-18e. T.D. 6,058 ft.; P.B. and sdtrkd.; T.D. 5,761 ft.; PB. 5,536 ft.; to sdtrk.; T.D. 6,048 ft.; P.B. and sdtrkd. 5,100 ft.; drlg. sd.&sh. 5,120 ft.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 8 Lafourche, sec. 11-18s-25e. Drlg. hd. sh. 2,664 ft.; 10¾-in. csg. 967 ft.; cg. L. rk. 4,026 ft.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, Sec. 35-21s-22e. Drlg. sd. 8,150 ft.
Texas Co. No. 7 Leeville, sec. 27-21s-22e. Drlg. sh. 3,641 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Robert Verret, sec. 32-19s-19e. Drlg. hd. sd.&gyl 1,876 ft.; 20-in. csg. 296 ft.; 13¾-in. csg. 3,164 ft.; cd. oil sd. 8,463-65 ft.; drlg. sdy. sh. 8,893 ft.

Lockport—Calcasieu Parish

La. Crusader Oil Co. No. 1 Milam Stieker, sec. 6-10s-9w. Drlg. sh. 1,828 ft.; 10¾-in. csg. 1,028 ft.; drlg. sh. 6,793 ft.
Magnolia Pet. Co. No. 23 Miller, sec. 9-10s-9w. T.D 7,952 ft.; P.B. 6,774 ft.; making D.S.T.
T. C. Markley No. 1 Farquhar (offset Continental No. 1 J. H. Moss). Drlg. sdy. sh. 2,058 ft.

Lake Lopg—Lafourche Parish

Fohs Oil Co. No. 5 State-Lake Long, sec. 64-17s-19e. Drlg. sh. 2,764 ft.; 13¾-in. csg. 2,761 ft.; T.D. 8,761 ft.; run 9⅝-in. csg.

New Iberia—Iberia Parish

H. Fotiades No. 7 Gulf Ld., sec. 25-12s-7e. Drk.
Wm. Helis No. 6 Schwing, sec. 56-12s-7e. Salt 3,949-50 ft.; P.B. 1,850 ft.; T.D. 3,938 ft.; trying to sdtrk. at 3,872 ft.; drlg. sdy. sh. 5,197 ft.; no report.
Texas Co. No. 4 J. P. Drake, sec. 26-12s-7e. Drlg. sh.&L. 3,590 ft.
Texas Co. No. 2 Clemente Hebert, sec. 25-12s-7e. 10¾-in. csg. 844 ft.; drlg. 1,367 ft.
Texas Co. No. 8 Duke, Sec. 26-12s-7e. Drlg. L. 3,590 ft.
Texas Co. No. 2 Schwing, sec. 71-12s-7e. T.D. 5,029 ft.; 7-in. csg. 5,014 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 H. J. Thevis, sec. 34-8s-1e. Loc.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 3 Garland, Sec. 4-6s-5e. 16-in. csg. 90 ft.; drlg. sd.&sh. 1,805 ft.
Pan American Prod. Co. No. 1 Rene Nezal, Drk.
Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. Drlg. sh. 1,570 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 36 Orleans Lve. Bd., Sec. 14-18s-15e. Drlg. sh. 9,505 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Orleans Levee Bd., Sec. 18-19s-17e. Drlg. sh. 7,960 ft.
Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 11,014 ft.; P.B. 10,978 ft.; tstd. S.W.; P.B. 10,780 ft.; perf. csg. 10,745-60 ft.; made sqze. job 10,060-70 ft.; perf. csg. 9,685-90 ft.; tstg.
Gulf Ref. Co. No. 5 State, sec. 17-19s-17e. Loc.
Gulf Ref. Co. No. 6 State, sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; S.D.
Amerada Pet. Corp. No. 2 South Coast Corp., Sec. 35-15s-19e. T.D. 12.200 ft.; run short string of 4½-in. csg.
Tide Water Oil Co. No. 1-A South Corp., Sec. 34-15s-19e. Drlg. 1,050 ft.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 13 United Ld. Co., Sec. 15-10s-4e. T.D. 1,712 ft.; salt.
Sorrento Pet. Corp. No. 2 White, sec. 22-10s-4e. S.D. 105 ft.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, Sec. 36-10s-4w. Drlg. sh. 11,347 ft.
Union Sulphur Co. No. 2 T. R. S. Farms sec. 23-10s-4w. Sh. 9,736 ft.; cmtd. 7-in. csg. 8,888 ft.; drlg. sh. 10,081 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. T.D. 4,153 ft., salt; P.B. 3,987 ft.; 7-in. csg. 3,827 ft.; bailed dry; S.D. 3,857 ft.
J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 19-9s-12w. Top salt 2,270 ft.; S.D.; 2,273 ft.; P.B. 1,150 ft.; S.D.

Timbalier Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,668 ft.; P.B.; 7-in. csg. 6,651 ft.; drlg. sdy. sh. 6,756 ft.

Valentine—Lafourche Parish

Wm. Helis No. 3 Valentine Sugars, Inc., Sec. 2-17s-30e. Drlg. sdy. sh. 5,650 ft.
Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. T.D. 10,055 ft.; P.B. 8,880 ft.; top sd. and sdy. sh. S.O. 9,300 ft.; 7-min. D.S.T. 9,290-9,325 ft. tstd. 33 stands of P.L.O.; 7-in. csg. 9,290 ft.; I.P. 15 B.P.H.; ¼-in. ck.
Pan American Prod. Co. No. 18 Harang, Sec. 8-17s-20e. Top sd. 4,606 ft.; T.D. 4,619 ft.
Pan American Prod. Co. No. 1 A. Robichaux, sec. 3-17s-20e. T.D. 5,889 ft.; stk. D.S.; P.B. and sdtrk.; 6,313 ft. D. P. stk.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 1 Bureas Lve. Bd., Sec. 23-21s-30e. Drlg. sdy. sh. 5,411 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Coreil, Sec. 44-3s-2e. Drlg. sh. 8,309 ft.
Continental Oil Co. No. 2 La. Ld. & Imp. Co., Sec. 46-3s-2e. Drlg. sh. 7,090 ft.
Continental Oil Co. No. 2 Opelousas, St. Landry, Sec. 44-3s-2e. Drlg. sh.&sd. 8,471 ft.
Continental Oil Co. No. 2 Piere Mc-

Daniel, Sec. 44-3s-2e. T.D. 8,997 ft.; W.O.C.
J. R. Hughes Oil Co. No. 1 J. E. Ortego, Sec. 36-3s-2e. Drlg. sdy. sh. 8,030 ft.

Vinton—Calcasieu Parish

J. B. Reddich No. 3 Vincent, sec. 34-10s-12w., T.D. 3,300 ft.; sdtrkd.; drld. to 2,250 ft.; stk. D.S.

Welsh—Jeff Davis Parish

Stanolind O. & G. Co. No. 1 Pousson, Sec. 28-9s-5w. T.D. 7,020 ft.; abd.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Reese, sec. 5-12s-2w. T.D. 3,197 ft.; 13⅜-in. csg. 3,114 ft.; drlg. brkn. sdy. sh. 7,517 ft.
Pure Oil Co. No. 1 Vermilion Irrig. Co., Sec. 41-12s-2w. Drlg. sd. 140 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 O. Miller, sec. 7-9s-5w. Drlg. sh.&L. 8,406 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Atlantic Ref. Co. No. 1 Klumpp, sec. 12-7s-2w. T.D. 2,520 ft.; run 10¾-in. csg.

Avoyelles Parish

Magnolia Pet. Co. No. 1 W. G. Bowden, Sec. 7-2s-4e. Drlg. 960 ft.

Calcasieu Parish

Sun Oil Co. No. 2 Lutcher-Moore, sec. 12-8s-13w. T.D. 2,019 ft.; 13⅜-in. csg. 1,996 ft.; drlg. sh. 2,165 ft.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.; T.A.

Cameron Parish

Federal Roy. Co. No. 1 State-Calcasieu Lake, Sec. 34-13s-8w. T.D. 75 ft.
Humble O. & R. Co. No. 2 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ Sec. 9-12s-6w. T.D. 9,782 ft.; sqzd. csg. with cmt. at 8,150 ft.; W.O.C.
Pure Oil Co. No. 2 Calcasieu Natl. Bnk., sec. 18-12s-4w (½ mi. N of No. 1). T.D. 1,950 ft.; run 8⅝-in. csg.
Union Sulphur Co. No. 3 Miami Corp., Sec. 33-12s-8w. (Willow Lake area). Drlg. sh. 5,570 ft.

Concordia Parish

Benedum & McCormick No. 1 L. P. Allen, sec. 35-5n-8e. R.U.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. T.D. 5,230 ft.; abd.

Lafourche Parish

Sun Oil Co. No. 1 Dilbert Stark, Brown Cypress Co., Sec. 70-15s-15e. Tstd. 13 stands oil; D.S.T. 7,186-7,253 ft.
Texas Co. No. 1 La Terre, sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,898 ft. drlg. sdy. sh.&shlls. 9,241 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. Drlg. sh. 4,853 ft.
W. T. Burton No. 1-B R. E. de Montluzin, sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. Drlg. sh.&L. 8,133 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.
E. F. Kalb et al No. 1 Lee Lbr. Co., sec. 9-5n-3e. S.D. 140 ft.

St. James Parish

Continental Oil Co. No. 1 Colonial Sugars Co., Sec. 46-12s-5e. Cg. sh. 9,405 ft.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, sec. 97-11s-7e. Drlg. sdy. L. 9,305 ft.

St. Landry Parish

Herton Oil Co. et al No. 1 Thistlephilite Lbr. Co., Sec. 60-4s-4e. Drlg. 4,110 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Jeanerette Lbr. Co., Sec. 14s-12e. T.D. 10,550 ft.; P.B. 6,955 ft.; S.D.
Texas Co. No. 6 State Lake Mongoulois, Sec. 10-10s-9e. Drlg. sd.&L. 7,599 ft.
Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D. 9,404 ft.; 7-in. csg. 8,912 ft.

Terrebonne Parish

Shell Pet. Corp. No. 1 Peters, sec. 73-18s-18e. T.D. 9,880 ft.; D.S.T. 9,870-80 ft.; tstd. 15 lbs. press.; recvd. 24 stands salty mud and 64 stands S.W.
Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.

Vermilion Parish

Desoto Oil Co. No. 1 Richardson, Sec. 30-12s-4e. Clearing loc.
Stanolind O. & G. Co. No. 2 F. Stovall, Sec. 88-14s-3e. Loc.

TEXAS

Week Ending September 3

GULF COAST FIELDS

Danbury—Brazoria County

Rowan Drlg. Co. et al No. 8 Jameson, H. Austin Sur. T.D. 1,970 ft.; W.O.C.

Hastings Field—Brazoria County

Stanolind O. & G. Co. No. 1-B Moore, I.&G.N. Sur. No. 22. Loc.
Stanolind O. & G. Co. No. 6 Artie Remely, H.T.&B. Sur. No. 28. Drlg. sd. 6,049 ft.
Stanolind O. & G. Co. No. 7 Remley, H. T.&B. Sur. No. 28. Loc.
Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.
Stanolind O. & G. Co. No. 2 P. McDonald, Mary Sloan Sur. Drk.
Stanolind O. & G. Co. No. 15 Sneed, A. C.H.&B. Sur. Drk.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. Drlg. sh. 1,639 ft.
Harrison & Abercrombie No. 1 Chenault, C. Breen Sur. Drlg. sh.&L. 9,196 ft.
Harrison & Abercrombie No. 1 Fisher, and Larsen, C. Breen Sur. R.U.
Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. Loc.
Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. Loc.

Stratton Ridge—Brazoria County

Sterling O. & R. Co. No. 1 J. C. Kramer, T. W. Grayson Sur. T.D. 3,695 ft.; P.B. 3,200 ft.; sdtrkd.; T.D. 4,650 ft.; run protection csg.

West Columbia—Brazoria County

Mike Hogg No. 3 fee, G. Tennille Sur. T.D. 5,516 ft.; P.B. 5,450 ft.
Texas Co. No. 25 W. H. Abrams, G. Tennille Sur. T.D. 4,881 ft.; P.B. to sdtrk.; T.D. 4,881 ft.; P.B. and sdtrk.; drlg. sh. 5,290 ft.
Texas Co. No. 26 Abrams, G. Tennille Sur. Drlg. sh. 4,812 ft.
Texas Co. No. 27 W. H. Abrams, G. Tennille Sur. Drlg. sh. 3,020 ft.
Texas Co.-Sterling O. & R. Co. No. 8 Phillips, Geo. Tennille Sur. Drlg. sh. 4,496 ft.

Cedar Point—Chambers County

Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 2-118 State, Galveston Bay. Driving piling.

Cotton Lake—Chambers County

J. R. Turnbull No. 1 Casey, S. Barrow Sur. T.D. 6,539 ft.; 5½-in. csg. 6,525 ft.; perf. csg. 6,460-70 ft. and 6,480-92 ft.; flwd. oil and S.W.; reperf. csg. 6,465-95 ft.; flwd. oil; well went dead; perf. csg. 6,390-6,410 ft.; pulled collapsed csg.; sdtrkd.; T.D. 6,490 ft.; W.O.C.; perf. csg. 6,460-70 ft.; tstg.

Seabreeze—Chambers County

Sun Oil Co. No. 1 Tate, H.T.&B.R.R. Sur. Bldg. drk.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1-38 State (6,000 ft. S of field in Turtle Bay), Loc.

Greens Lake—Galveston County

Sun Oil Co. No. 2 Houston Farm Dev. Co., D. Buckley Sur. T.D. 7,505 ft.; cmtd. csg. perf. csg. 6,965-85 ft.; flwd. 500 bbls. of fluid, 90% S.W., 10% oil; ¼-in. ck.

Hitchcock—Galveston County

N. W. Hunter No. 1 J. D. Hughes, A. Burke Sur. T.D. 6,020 ft.; abd.
Maco Stewart No. 4 fee, J. Spillman Sur. T.D. 5,149 ft.; 5½-in. csg. 5,141 ft.
Maco Stewart No. 5 fee, J. Spillman Sur. Loc.

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No. 1 C. Ehrkardt, H. Simmons Sur. R.U.

Clear Lake—Harris County

West Prod. Co. No. 4 West fee, J. B. McKinstry Sur. Comp.; no details available.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 C. J. Cavwood, Reels & Trobough Sur. T.D. 4,672 ft.; run electrical cg. survey.
Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 2 Paul Weber, Reels & Trobough Sur. Loc.

Eureka—Harris County

Jack Frazier No. 2 Emma Helberg, J. Reinerman Sur. Drlg. sh. 4,367 ft.
Jack Frazier No. 1 Lackner, H. Reinerman Sur. Cg. sh. 8,637 ft.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.
Means & McGehee No. 1-D Laura Lackner, Sec. 3, Shady Acres Subd. Drlg. sh. 2,136 ft.
Tide Water Asso. Oil Co. No. 2-A Lackner, J. Reinerman Sur. T.D. 7,760 ft.; cmtd. csg. on bttm.; tstd. S.W. 7,720-35 ft.; fsg.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Adell, J. Clarkson Sur. R.U.
Amerada Pet. Corp. and Stanolind O. & G. Co. No. 3 Smith, J. Waugh Sur. Loc.
Amerada Pet. Corp. and Stanolind O. & G. Co. No. 2 Silberg, Geo. Ayers Sur. T.D. 6,853 ft.; run csg.
Bridwell O. & G. Co. No. 1 Gibson, Geo. Ayers Sur. Drlg. sh. 4,616 ft.
Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. T.D. 6,864 ft.; perf csg. 6,839-43 ft.; pmpg. 5 bbls. fluid per hr., 90% S.W.
Gem Oil Co. No. 6 Reid, Geo. Ayers Sur. R.U.
E. M. Halley No. 1 Albert Brown, J. Clarkson Sur. Loc.
Housch-Thompson No. 1 Fisher Est., T. Hogan Sur. S.D. 7,703 ft.
D. W. Moore and O'Hern No. 1 Whitehead-Rash, W. S. Powell Sur. Drlg. sh. 2,610 ft.
Skelly Oil Co. No. 3 J. H. Emmott, J. Waugh Sur. Drlg. sh. 4,530 ft.
Smith and Ownby No. 4 Gibson, Geo. Ayers Sur. Drlg. sh. 6,285 ft.
Stanolind O. & G. Co. No. 1 Fritz Look, S. Lewis Sur. T.D. 7,495 ft.; 7-in. csg. 6,989 ft.; perf. csg. 6,947-56 ft.; flwd. 174 bbls. fluid, 12 hrs., 5% brksh. wtr.
Stanolind O. & G. Co. No. 1 Schumacker, J. Daswell Sur. Drk.
Williams and Thompson No. 2 A. K. Kramer, G. S. Reed Sur. Drlg. sh. 5,200 ft.
Windsor Oil Co. No. 3 O. E. Parker, J. Waugh Sur. Loc.
Windsor Oil Co. No. 1-B C. D. Ley, Geo. Ayers Sur. Drlg. sh. 6,585 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 3 Herman Hospital, T. Choate Sur. T.D. 6,047 ft.; tstg.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 1 A. S. Lebeu, T. Choate Sur. Drlg. sh. 1,067 ft.
Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 E. E. Watson Drk.
Humble O. & R. Co. No. 1 C. E. Wood, W. C. D. Hall Sur. Drlg. sh.&L. 5,470 ft.

Cordele—Jackson County

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A. Pace Sur. T.D. 8,198 ft., salt; top salt 8,156 ft.; 5-in. csg. 5,659 ft.; perf. 5,548-52 ft.; P.B. 3,895 ft.; perf. csg. 3,880-90 ft.; P.B. 3,801 ft.; perf. csg. 3,820-30 ft.; flwg. oil; went dead; pulling tbg.

Cheek—Jefferson County

Shell Pet. Corp. No. 1 Ed. Pleasant, C. Hildebrand Sur. T.D. 7,726 ft.; tstd. oil on D.S.T. 7,711-21 ft.; P.B. 7,725 ft.; flwg. 36 bbls. dist. daily through ¼-in. ck.; killed well; perf. csg. 3,845-55 ft.; flwd. 58 bbls. fluid; sanded up; pulling tbg.

LaBelle—Jefferson County

Sun Oil Co. No. 4 Broussard-Hebert, B. Blackman Lge. Drlg. sh. 8,056 ft.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 5 J. H. Phelan, A. Stivers Sur. T.D. 8,319 ft.; flwg. dist.; I.P. 167 bbls. dist. per day; ¼-in. ck.

Spindletop—Jefferson County

Unity Oil Co. No. 1 Greer Noll, J. A. Veatch Sur., Blk. 7, Spindletop Hgts. Subd. (NE flank wildcat). Drk.

Hardin—Liberty County

Humble O. & R. Co. No. 3 W. S. Partlow, H. B. Johnston Sur. Drlg. sh. 1,609 ft.
Shell Pet. Corp. No. 4-A J. H. Cessna, H. B. Johnson Sur. R.U.
Texas Co. No. 1 Davis, A. B. Hardin Sur. Drlg. sh. 3,510 ft.
Woodley Pet. Co. No. 1 Emma Davis et al, A. B. Hardin Sur. T.D. 7,636 ft.; comp.; no ga.
Woodley Pet. Co. No. 2 Emma Davis et al, A. B. Hardin Sur. R.U.

McCrosky—Matagorda County

Pierce Est. No. 5 fee, David Fenton Lge. Loc.
Pierce Est. No. 4-A Pierce, T.D. 6,626 ft.; 5½-in. csg. 6,621 ft.; I.P. 103 bbls. 12 hrs.; ⅛-in. ck.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 C. W. Badouh, E. Hall Sur. Drlg. sdy. sh. 9,130 ft.; no report.
Hamman Expltn. Co. No. 2 Badouh, E. Hall Sur. Loc.
Hamman Explo. Co. No. 3 Thompson, E. Hall Sur. Drlg. sh. 7,639 ft.; no report.

Segno—Polk County

Gulf Oil Corp. No. 3 A. Ragan, I.&G.N. Sur., Sec. 15. Drlg. sh.&L. 7,266 ft.
Gulf Oil Corp. No. 12 Wing, T.D. 8,123 ft.
Humble O. & R. Co. No. 9-B Kirby, M. Victor Sur. T.D. 8,149 ft.; tstd. 495 ft. of oil-cut mud 8,070-8,100 ft.

Magnet—Wharton County

Gray & Wolf No. 1 State, Colo. River Sur. 10¾-in. csg. 1,160 ft.; T.D. 5,530 ft.; 5½-in. csg. 5,523 ft.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Glenn McCarthy No. 1 G. C. Street, D. H. M. Hunter Sur. T.D. 6,025 ft.; P. B. to sdtrk. and test sd. at approx. 4,100 ft.
W. C. Neville et al No. 1 Houston Farms Dev. Co., Perry & Austin Sur. 10¾-in. csg. 1,170 ft.; T.D. 7,007 ft.; abd.
Texas Co. No. 5 Freeport Sulphur Co., H. Burt Sur. T.D. 4,018 ft.; fsg.

Burleson County

Peerless O. & G. Co. No. 1 G.C.&S.F. fee, James Lastley Sur. T.D. 2,028 ft.; abd.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D Smith Sur. Loc.
C. C. Calvin No. 1 Sherman, James McFaddin Sur. T.D. 1,555 ft.

Galveston County

Sun Oil Co. No. 1 Cade, A. Dickinson, T.D. 8,120 ft., sh.; cmtd. 7-in. csg. 8,750 ft.; (protection string); D.S. stk. sdtrkd. hole 7,341 ft.; T.D. 8,245 ft.; 9⅝-in. csg. 8,242 ft.; drlg. sh. 8,576 ft.

Harris County

H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.
Humble O. & R. Co. No. 1-A Keeler, W. Whitlock Sur. Loc.

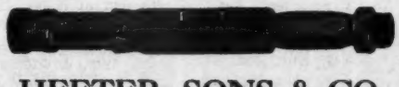
Jackson County

Magnolia Pet. Co. No. 3-A West Rnch., Ramon Musquez Sur. 13⅜-in. csg. 1,346 ft.; T.D. 5,086 ft.; recvd. 420 ft. oil; D.S.T. 5,078-86 ft.; 7-in. csg. 5,080 ft.; I.P. 132 B.P.D.; 9/64-in. ck.

Jefferson County

Geo. Echols et al No. 1 American Natl. Bnk., J. J. French Sur. Spd.
I. E. Harwell No. 1 State, Gulf of Mexico, T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 8-B McFaddin-State, Gulf of Mexico, 7-in. csg. 810 ft. drlg. sd.&sh. 1,840 ft.

REGISTERED PROFESSIONAL ENGINEERS
GAS AIR WATER
REPRESSURING
INSTALLATION OPERATION
PETROLEUM ENGINEER
JO H CABLE
WICHITA FALLS TEXAS
GAS MEASUREMENT PERMEABILITY
COMPRESSOR PLANTS POROSITY
BOTTOM HOLE PRESSURE SATURATION
GAS OIL RATIOS RECOVERABLE OIL
CONTROL OF FLOW THRU FORMATION
REGISTERED PROFESSIONAL ENGINEERS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MAIN OFFICE AND WORKS, BUTLER, PA.
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Heeter's Improved Patent Swabs, Corrugated Friction Sockets, Wire Line Pumping Outfits, Sand Pumps and other Gas and Oil Well Materials.

Lavaca County

Crosby Drlg. Co. No. 1 Bertha Graf, Sublime area. Drlg. sh. 4,415 ft.

Liberty County

John G. Mayo, Inc., No. 1 M. E. Roberts, J. F. DeRumayor Sur. 7-in. csg. 40 ft.

Wallace & Hargrove et al No. 1 J. C. League, M. DeLos Santos Sur. Drlg. sh. 4,355 ft.

Matagorda County

Glenn H. McCarthy No. 1 Nancy Moffett et al, Susan Perkins Sur. 10¾-in. csg. 2,405 ft.; drlg. sdy. L. 8,251 ft.

Ohio Oil Co. No. 1 W. D. Cornelius, P. C. Yarborough Sur. Drlg. sh. 6,957 ft.

Montgomery County

Deep South Pet. Corp. No. 1 Foster Lbr. Co., Preyor Bryan Sur. 10¾-in. csg. 700 ft.; S.D. 2,000 ft.

David D. MacDaniel No. 1 J. C. Fleming, D. M. Gaheen Sur. Drlg. sh. 2,867 ft.

J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 380 ft.

W. L. Todd et al No. 1 I. L. Martin, Z. Landrum Sur. Drlg. sh. 3,810 ft.

Newton County

Republic Prod. Co. No. 1 Sabine Tram, Isaac Garner Sur. (NW Starks Prospect). R.U.; prep. to spd.

Waller County

Stanolind O. & G. Co. No. 1 J. J. Sweeney Est., T. S. Reese Sur. No. 110, 2,640 ft. E of No. 1 Freeman in Katy gas field. Loc.

Stanolind O. & G. Co. No. 1 Young, T. S. Reese Sur. No. 124. 13¾-in. csg. 136 ft.

Washington County

Speed Oil Co. et al No. 1 August Makowsky, D. McIntyre Sur. 10¾-in. csg. 964 ft.

Wharton County

Albert Plummer No. 1 Mrs. Corbett, Kuykendall Sur. T.D. 6,100 ft.; P.B. 2,930 ft.; comp. for gas well.

S. W. TEXAS WILDCATS

Atascosa County

Mason Altgelt No. 1 J. G. Gibson, Francisco De La Garza Sur. T.D. 3,019 ft.; abd.

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. Spd.

Western Gulf Prod. Co. No. 2 Vanegas, Francisco De La Garza Sur. T.D. 2,710 ft.; abd.

Bastrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. Drlg. sh. 1,800 ft.

Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. Drlg. clk. 6,280 ft.

Bee County

Atlantic Ref. Co. No. 1 Courtney, Geo. Kerr Sur. T.D. 3,660 ft.; D.D.; T.D. 3,665 ft.; R.U. to pmp.

Devonian Oil Co. No. 1 Maley, Henry Coley Sur. T.D. 4,170 ft.; abd.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,185 ft.

Bexar County

M. S. Blackburn No. 1 Miller, Thos. Barwick Sur. No. 324. R.U.

Frank Gilpin, Jr., No. 1 Nieman, Juan Montes Sur. S.D. 40 ft.

Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 737 ft.; 5⅛-in. csg on bttm.; abd.

Lewis Ridder No. 1 fee, Jose Maria Baerera Sur. Loc.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; drlg. L. 498 ft.

Caldwell County

R. H. Dye No. 1 Voight, Wm. Watkins Sur. S.D. 1,500 ft.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogsberry Sur. T.D. 6,730 ft.; rng. protection csg.

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. S.D. 60 ft.

Duval County

W. H. Appell No. 1 Rogers, El Mesquite gr. Drlg. sh. 241 ft.

James Foster No. 1 Foster, B.S.&F. Sur. No. 268. S.D. 1,850 ft.

Frank Gravis No. 2 Schallert, Seale, Morris & Seale Sur. No. 255 (Palagana salt dome). Drlg. 2,930 ft.

Magnolia Pet. Co. No. 1 Duval Co. Rnch. Co., C.C.S.D.&R.G.N.G. Sur. No. 81. Drlg. sh. 932 ft.

Joe Palmer No. 1 Gruy, S. G. Hays Hrs. Sur. T.D. 3,137 ft.; abd.

E. J. Purl No. 1 Corkill, J. Poitevent Sur. R.U.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 1 Schley, Jos. Travalder Sur. No. 174. 15-min. D.S.T. 3,520-51 ft. tstd. no press.; recvd. 175 ft. mud with oil odor and 180 ft. S. W.; drlg. ahead to Edw. L.

Goliad County

Sun Oil Co. No. 1 Lee Homer, John Payne Sur. Drlg. sh. 5,697 ft.

Guadalupe County

R. Hamil No. 1 E. J. Zuehl, Vincente Duran Sur. Drlg. sh. 127 ft.

A. D. King Rosenbrock, Vincente Duran Sur. S.D. 301 ft.

Pegg Bros. No. 2 Maierhoffer, L. H. Peters Sur. Drlg. sh. 843 ft.

R. A. Williams No. 1 Weber, Guadalupe Torres Sur. Drlg. 1,067 ft.

Hidalgo County

R. E. Hardin et al No. 1 E. M. Car, Hidalgo Co. Canal Subd., Lot 8, Blk. 8. Drlg. sh. 2,300 ft.

R. E. Harding No. 1 Lynn, Juan Jose Hinojosa Sur. T.D. 7,300 ft.; perf. 5½-in. csg. 7,103-15 ft.; tstd. S.W.; perf. csg. 7,074-82 ft.; tstd. S.W.; sqzd. perf.; perf. csg. 5,970-74 ft.; I.P. 350,000 ft. gas per day; 15 bbls. S.W. and 1½ bbls. dist.

Phillips Pet. Co. No. 1 Flores (deep test N of Samfordyce field). T.D. 5,880 ft.; cmtd. 7⅝-in. csg. 5,847 ft. (protection string); T.D. 7,595 ft.; run elec. sur.

Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; T.D. 9,618 ft.; 5½-in. lnr. set 8,369-9,618 ft.; tstd. S.W. 9,420-30 ft.; made sqze. job; P.B. 9,390 ft.; perf. csg. 9,372-80 ft.; swbd. S.W. and gas; perf. csg. 9,347-52 ft.; tstg.

Wheelock & Collins No. 1 Temple Lbr. Co., Lino Cavos, Porc. 57-A. S.D. 6,589 ft.; high wtr.

Jim Hogg County

Henshaw Bros. No. 1 Trevino, L. Ramirez Sur. No. 38. Drlg. 1,607 ft.

Humble O. & R. Co. No. 2 Kelsey Bass, San Rafel Sur. T.D. 3,482 ft.; 10¾-in. csg. 3,469 ft.; T.D. 4,754 ft.; run csg.; tstd. 1,011 ft. P.L.O.; D.S.T. 4,726-54 ft.

Jim Wells County

J. W. Cosner No. 1 C. B. Stillwell, Blk. 62, L. G. Collins Farm Trs. T.D. 5,300 ft.; 7-in. csg. on bttm.

H. H. Howell No. 1 Stillwell, Blk. 63, L. G. Collins Subd. Cg. 5,278 ft.

Humble O. & R. Co. No. 1 Wm. Adams, Marcellino Lopez Gr., Abst. No. 28. T.D. 6,066 ft.; abd.

Humble O. & R. Co. No. 1 John A. True, Los Presenos de Abajo Sur. 10¾-in. csg. 1,090 ft.; drlg. sh. 3,769 ft.

Magnolia Pet. Co. No. 1 Romano, V. de Garcia Las Animas Sola gr., 1,126 ft. E of discovery well. Drlg. sdy. sh. 5,310 ft.

Magnolia Pet. Co. No. 1 Martin, Ana Maria Vaco gr. Drlg. sh. 6,676 ft.

Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. S.D. to rep. rig.

Smith & McDannald No. 1 Rooney, Casa Blanca gr., Blk. 11. Drlg. sh. 4,320 ft.

Transwestern Oil Corp. No. 1 B. H. Dunlap, Sur. 179-181 (1⅛ mi. SW East Premont field). 18⅝-in. csg. 485 ft.; T.D. 5,107 ft.; fsg.

Kendall County

Geo. Dorsey No. 1 Flanagan, J. Sweeney Sur. No. 12. S.D. 350 ft.

Millican and Norman No. 1 Werner, J. F. Torrey Sur. T.D. 909 ft.; bailed oil; 5½-in. csg. 907 ft.

Kerr County

H. C. Starkey No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 100 ft.; (cor.).

Kimble County

Phillips Pet. Co. No. 1 Mudge, C.C.S.D.& R.G.N.G.R.R. Sur. No. 9. T.D. 2,003 ft.; fsg.

Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. Drlg. 200 ft.

Plateau Oil Co. No. 1 Hunger, J. Dujner Sur. T.D. 1,600 ft.; prep. to sdtrk.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay. Lse. No. 528. T.D. 9,223 ft.; fsg.; (cor.).

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S of Ezzell). Spd. and S.D.

Midway Oil & Royalty Co. No. 1 Michaleik, S. H. Jack Sur. Drlg. sh. 5,620 ft.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. T.D. 4,405 ft.; abd.

Fred Pederson et al No. 1 Brown, David Hudson Sur. Drlg. sh. 2,719 ft.; no report.

A. H. Tarver No. 1 J. W. Lawhon, T.D. 3,345 ft., Edws. L.; run 5½-in. csg. to test at 3,300 ft.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J. Pierce Sur. 10¾-in. csg. 20 ft.; S.D. 494 ft. for wtr.

R. H. Feltner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.

Frank Gravis and Mintex Dev. Co. No. 1 Northwest Inv. Co., Uel Ritchie Sur. No. 133. Loc.

Hanna et al No. 2 West, C. O. Ragland Sur. Drlg. sh. 2,633 ft.

Holland Oil Co. No. 1 Wallace, Cameron Co. Sch. Ld. Sur. S.D. 200 ft.

N. P. Oil Co. No. 1 Griffith, J. Poitevent Sur. No. 49. T.D. 945 ft.; abd.

Wellington Oil Co. No. 1 Sanger, T.T.R. R. Sur. 349. Spd.

V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 210 ft.

Wallace & Jones No. 1 Burrows, Eneas Smith Sur. Cg. 2,266 ft.

McMullen County

Albright & Dover No. 1 Nueces Ld. & Lvstk. Co., B.S.&F. Sur. No. 119. Cd. oil sd. 1,202-11 ft.; T.D. 1,213 ft.; 4-in. csg. 1,201 ft.

W. T. Kirby No. 1 Chylek, J. M. Hernandez Sur. S.D. 1,038 ft.

Wm. Spice, Jr., No. 1 Edrington, A.B.& M. Sur. 57 (5 mi. E. Loma Alto). Drlg. sh. 819 ft.

Maverick County

L. M. Lockhart No. 1 Ashbrook, W. J. Phillips Sur. No. 83. Drlg. L. 3,007 ft. no show.

Wellington Oil Corp. No. 1-B Chittim, I. &G.N. Sur., Blk. 6, sec. 98, 14 mi. SE of Eagle Pass. Drlg. 2,630 ft.

Medina County

J. W. Cromwell No. 1 J. W. Tondre, J. Rogers Sur. T.D. 1,250 ft.; P.B. 1,080 ft.; cmtd. csg. 1,021 ft.; shot 1,024-80 ft.; drlg. brkn. chlk. and serp. 1,307 ft.

L. W. Stieren No. 1 Haegelin, Dolly Smitherman Sur. Drlg. L. 625 ft.

Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. T.D. 935 ft.; abd.

Ziegler et al No. 1 Wiemers, F. Thurman Sur. S.D. 765 ft.

Milam County

Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.; C.O. set 7-in. csg. 1,167 ft.; T.D. 1,785 ft.; abd.

Nueces County

Texas Co. No. 1 E. Little et al, Wm. Little Sur. Loc.

Union Prod. Co. No. 1 Minnie Brown (Agua Dulce area). T.D. 10,768 ft.

Refugio County

I. J. Allen No. 1 Rooke, Aldrite Sur. O.W.D.D.; tstd. S.W.; D.S.T. 5,415-20 ft.; top sd. 5,902 ft.; D.S.T. 5,897-5,902 ft.; tstg. 105 lbs. press.; 12 min.; well flwd. oil; cg. ahead.

I. J. Allen No. 3 Rooke, Jose Miguel Aldrite and Jose Marie Aldrite Sur. (933 ft. SE of No. 2). Loc.

San Patricio County

Seaboard Drillers No. 1 Smith, G. H. Paul Subd. of J. J. Welder ranch. 10¾-in. csg. 768 ft.; drlg. sh. 4,000 ft.

Starr County

Hagan and Stewart Oil Co. et al No. 1 Salinas, Antonio Canales Salinas gr. Cg. sh. 1,916 ft.

Magnolia Pet. Co. No. 1 Guerra, Santa Cruz gr. (LaReforma field), 1,900 ft. SW of discovery well. Drlg. sh. 4,680 ft.

Massingall and J. R. B. Moore No. 1 Garza, Jose S. Garza Porc. 88. Drlg. sh. 2,310 ft.

Sun Oil Co. No. 1 Lopez, N. Vela Sur., Porc. 82. T.D. 2,844 ft.; abd.

Sun Oil Co. No. 1 Smith, A. J. Smith Sur. Cg. 4,410 ft.

W. W. Zimmerman et al No. 1 Starr Co. Cattle Co., Juan De La Garza, Porc. 89. Cg. S.W. sd. 2,340 ft.

Travis County

L. G. Priest No. 1 Mazock, J. M. Leavy Sur. No. 5. S.D. 855 ft.

R. F. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. 5-in. csg. 1,009 ft.; drlg. L. 1,200 ft.

Webb County

W. H. Holland No. 1 Bruni, J. V. Borrego gr., C Blk. 76, El Ranchito pasture. R.U.

Lewis Jones No. 1 Bruni, Alberca De Arriba gr. Cg. sh. 2,089 ft.

J. W. O'Byrne No. 1 Lacey, Mary E. Wideman Sur. Drlg. sh.&L. 2,315 ft.

Williamson County

F. J. Anderson No. 1 Teichelman Absalam, Jett Sur. Drlg. L. 1,800 ft.

H. H. Coffield No. 1 Poe, Harrison Owens Sur. S.D. 2,175 ft.

Fritz Fuchs No. 1 Stiles, Jehu Bevil Sur. No. 56. S.D. 1,085 ft.

Wilson County

Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 3,008 ft.

Zapata County

Thompson & Lowe No. 1 Ramirez, Blk. 6, Doyle Subd. of Porc. 18. S.D. 700 ft.

EAST TEXAS

(Border Counties)

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. T.D. 4,574 ft.; prep. deepen.

Cass County

Bateman Drlg. Co. No. 1 Eliza Jaynes, 80-ac. tr., Ambrose Douthet Sur. Drlg. 2,300 ft.

Harry Hanbury No. 1 Echols et al, SE cor. Echols tr., Wm. Mayes Sur. Tstd. S.W. and S.O. 5,987 ft.; P.B. 5,967 ft. and W.O.C.; old T.D. 5,987 ft.; drld. out to 5,970 ft.; tstd. S.W.; S.O.; W.O.

Texarkla Oil Corp. No. 1 Mayo, Bryant Holmes Sur. Set 6⅝-in. csg. 6,120 ft.; perf. 6,068-80 ft.; tstd. S.W.; shot formation 6,068-80 ft. with 3 qts. nitro; tstg.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 Badgett, Allen Urquhart Sur. Set 7-in. csg. 5,969 ft.; W.O.C.; T.D. 5,998 ft.

Ark.-La. Gas Co. No. 4 Holland, Hanks Sur. Set 7-in. csg. 6,050 ft.; acdz. with 3,000 gal acd.; tstd. 13 B.P.H.; ¼-in. ck. and 3,500,000 ft. gas; reacdz.; tstd. 5½ B.P.H.; ¼-in. ck.; T.P. 1,950 lbs.; C.P. 2,050 lbs.; arng. set short string 5-in. csg.; T.D. 6,090 ft.

Ark.-La. Gas Co. No. 1 Walker, Humphries Sur. Set 7-in. csg. 5,969 ft.; T. D. 5,972 ft.; comp.; 63,354,000 ft. gas; open flow; 2,260 lbs. R.P.; perf. 5,910-60 ft.; acdz. with 4,000 gal.

T. Bell et al No. 1 Moseley, D. Lane Sur. W.O.C. 2,522 ft.

Gulf Oil Corp. No. 3 Grubaugh, Coy Sur. Set 5-in. csg. 6,102 ft.; W.O.C.; T.D. 6,123 ft.

Hollandsworth Drlg. Co. No. 1 H. B. Davis, Wm. Smith Sur. Drlg. L.&sh. 5,320 ft.

Phillips Pet. Co. No. 2 Beard, Bennington Sur. T.D. 6,050 ft.; arng. set csg.

Phillips Pet. Co. No. 2 Benefield, J. Hanks Sur. T.D. 6,170 ft.; set 7-in. csg. 6,157 ft.

Shell Pet. Corp. No. 5 Schluter, Wm. Smith Sur. 5-in. csg. 6,094 ft.; perf. 6,066-82 ft.; tstg. 6,097 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Top lower Marine 7,792 ft.; drlg. hd. bl. sh. 10,786 ft.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. D.S. stk.; T.D. 5,044 ft.

Pet. Heat & Power Co. No. 1 Jasper State Bank, McDonald Sur. T.D. 2,506 ft., sd.; S.D.W.O.

Shelby County

W. A. Reddit No. 2 Pickering Lbr. Co. P. J. Loggins Sur. Set 7-in. csg. 2,920 ft.; T.D. 4,420 ft.; Woodbine sd. 2,905-10 ft.; flwg. in pits; arng. dpn.

WEST TEXAS WILDCATS

Andrews County

Fuhrman Pet. No. 1 G. O. Ashton, sec. 12, Blk. A-42, P.S.L. Sur. W.O.C. 4,208 ft.

Olson Drlg. Co. No. 1 Lockhart-Brown, 5 mi. W of south end of Fuhrman pool. P.B. suf. wtr. 4,981 ft.

Texas Co. No. 1-H University, Sec. 4, Blk. 14, Univ. Sur. Loc.

J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A, R.U.R. 120 ft.

H. C. Wheeler No. 1 White-Shelton, Sec. 18, Blk. 36-A, P.S.L. Sur. W.O.R. 150 ft.

Cochran County

Magnolia Pet. Co. No. 1 Della Wright, Lab. 7, Lge. 96, Mills Co. Sch. Lds. sur. Spudded.

Texas Co. No. 1 D. S. Wright, Lge. 115, Lab. 23, Potter Co. Sch. Lds. Drlg. 4,816 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39, Blk. W, T.&P. Sur. Pulling tbg. 1,861 ft.

Crane County

Gulf Oil Corp. No. 4 McKnight, sec. 8, Blk. B-21, P.S.L. Sur. Cg. 6,348 ft.

Gulf Oil Co. No. 2-B State-Lassiter, University Sur., Blk. 30, Sec. 27, Tstg., swbg. 30 B.O.P.D. 3,010-3,113 ft.

Texas Co. No. 1-G Univ., sec. 7, Blk. 30, Univ. Sur. Comp. 154 B.O.P.D.

Crockett County

Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. S.D.R. 1,936 ft.

Culberson County

Harry J. W. Niehaus No. 1 fee, Blk. 109, sec. 13, P.S.L. Sur. 1,800-ft. test. S.D. 2,500 ft.

Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. Drlg. 2,300 ft.

Ector County

Fields et al No. 1 Owenwood, sec. 6, Blk. 44, T.&P. Sur. W.O.C. 10-in. 240 ft.

Sinclair Prairie No. 2-B P. Moss, sec. 40, Blk. 44, T.&P. Sur. Drlg. 4,177 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3,571 ft.

Gaines County

Atlantic Refg. Co. No. 1 A. J. & J. J. Parker, Sec. 264, Blk. G. W.T.R.R. Sur. M.I.M.

Osage Drlg. Co. No. 1 B. E. Miller, sec. 281, Blk. G, W.T.R.R. Sur. D.&A. at 5,507 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 7,291 ft.

Hockley County

Gulf Oil Co. No. 2 Mallett, Lge. 34, Labor. 25. Tstg. T.D. 5,090 ft.

Sid W. Richardson No. 2 Slaughter, Lge. 39, Lab. 58, Maverick Sur. W.O. flwd. 100 B.O.P.D.

Snowden & McSweeney No. 1 A. A. Slaughter, Zavalle C.S.L. Sur., Lge. 35, Lab. 74. Drlg 1,148 ft.

The Texas Co. No. 1-B Mallett Lands, Lab. 1, Lge. 52, Scurry C.S.L. Sur. Loc.

Howard County

Anderson & Prichard No. 1 H. Hyman Est., sec. 85, Blk. 20, W.&N.W. Sur. Drlg. 1,833 ft.

Lockhart Pet. Corp. No. 2 Robert Scott,

W.&N.W. Sur., Blk. 29, Sec. 86. Comp. 678 B.O.P.D.

W. B. Powell, Trustee, No. 1 Guitar Trust, Blk. A, sec. 17, Bauer & Cockrell Sur. Drlg. 2,996 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. 4,832 ft.

Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. U.R. 4,390 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,742 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. Drlg. cmt. 3,150 ft.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. W.O.C. 5-in. 1,200 ft.

Pecos County

E. B. Carruth Tr. No. 1 J. H. Tippett, Sec. 4, Blk. 194, G.C.&S.F. Sur. Loc.

Geo. J. Greer No. 1 Price Est., Sec. 3, Blk. 12, H.&G.N. Sur. Drlg. 600 ft.

J. N. Gregory et al No. 1 Humble-O'Niell. H.&G.N. Sur., Blk. 10, Sec. 74. Drlg. 1,025 ft.

Humble O. & R. Co. No. 1 A. H. Robertson, Sec. 27, Blk. OW. T.C.R.R. Sur.; 4,500-ft. test. Bldg. drk.

Magnolia Pet. Co. No. 1 McKee. P.B. 6,197 ft.; P.B. 6,180 ft.; P.B. 5,306 ft. S.D.O.

S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Fsg. 7,275 ft.

Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. Spd. and drlg. 75 ft.

Union Oil & Mining Co. No. 1 First Natl. Bnk. of Ft. Stockton, sec. 6, Blk. 9, H.&G.N. Sur. S.D. 1,760 ft.

Reagan County

Culbertson & Irwin No. 1 J. F. Nunn, Sec. 26, Blk. B, L.&S.V. Sur. Drlg 2,-155 ft.

Reeves County

Frankley & Rice No. 1 W. A. Tunstill, Sec. 10, Blk. 56, T.&P. Sur. Drlg. 1,590 ft.

Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. S.D.R. 3,200 ft.

Runnels County

Castor-Koerner & Goodrich No. 1 Beddo, Subdiv. 41, T. T. Williamson Sur. No. 15½. Loc.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. Drlg. 3,375 ft.

Gursham-Hunter No. 1 C. M. Wellborn, sec. 142, Blk. 25, H.&T.C. Sur. Drlg. 2,975 ft.

Sterling County

J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. S.D.O. 3,011 ft.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. U.R. 5-in 4,922 ft. H.F.W.

Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. S.I. 5,-176 ft.; tstg. on pmp. 290 B.F.P.D. some B.S.&W.

Terrell County

Schermerhorn Oil No. 1 H. P. Allison, sec. 22, Blk. B-2, C.C.S.D. & R.G.N.G. Sur., 2,500-ft. test. Drlg. 1,514 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch. Sur. Drlg. 4,753 ft.

J. B. Watson No. 1 Llano, C.S.L. Sur., Sec. 16; 500-ft test. Drlg. 300 ft.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. Loc.

Val Verde County

A. W. Little No. 1 R. W. Sellers, sec. 34, H.&G.N.R.R. Sur. 1,500-ft. test. Prep. deepen from 200 ft.

Ward County

Herschel M. Jaffe No. 1 Viola Meyers, Sec. 17, Blk. 32, H.&T.C. Sur. Drlg. 225 ft.

Peerless O. & G. No. 1 F. M. White, sec. 36, Blk. 1, H.&T.C. Sur. S.D.O. 2,-276 ft.

Winkler County

S. W. Richardson No. 1-A J. M. Broshara, Sec. 22, Blk. 77, P.S.L. Sur. Drlg. 335 ft.

J. R. Sharp No. 1 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. Drlg 1,195 ft.

J. R. Sharp No. 2 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. Loc.

Yoakum County

Honolulu Oil Co. No. 1 R. M. Kendrick, Sec. 825, Blk. D, J. H. Gibson Sur. Loc.

Magnolia Pet. Co. No. 1 Lynn, sec. 770. Bailing 4,785 ft.

S. C. Yingling et al No. 1 Nettie Barrier, Sec. 6. Drlg. 3,600 ft.

TEXAS PANHANDLE

Carson County

Texhoma Nat. Gas Co. No. 1 J. M. Poling, Sec. 30, Blk. Y-2, T.&T. Sur. S.G. 2,914-3,058 ft.; sour gas; drlg. 3,137 ft.

Childress County

Aggers & Stewart No. 1 Schulter, Sec. 422, Blk. H, Waco & Northwestern Sur. D.&A. at 6,007 ft.

Collingsworth County

White No. 1 Wischamper. S.D. 2,263 ft.

Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. R.U.S.T. 2,840 ft.

Floyd County

Mills Bennett No. 1 Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. S.D. 5,960 ft.

Gray County

Lone Star Gas Co. No. 1 Fowler. S.D. 2,730 ft.

English No. 1 Eudy. S.D. 3,977 ft.

Hardeman County

Hillsboro Oil Co. No. 1 Thomas, Sec. 314, Blk. H. Loc.

Kent County

B. Dolman et al No. 1 C. V. O'Keefe. Sec. 50, Blk. 1, 15½-in. csg. set at 140 ft.; drlg. at 180 ft. last report.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 50 ft.

Parmer County

Jennings No. 1 Wilson, Sec. 73, Blk. H, Kelly Subd. Loc.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. Drlg. 3,-486 ft.

Roberts County

Whitlock No. 1 Cunningham. S.D. 2,-750 ft.

E. C. TEXAS WILDCATS

Anderson County

J. H. Gardner No. 1 G. W. West, L. Hopkins Sur., 2 mi. SE of Denison Springs. Cg. 5,674 ft.

H. L. Hunt No. 1 Shaw & Cern, D. Parker Sur. Tstg. 5,350 ft.

Angelina County

W. C. Atkinson No. 1 So. Pine Lbr. Co., T.&N.O. Sur. No. 14, 9 mi. SW of Lufkin. M.I.M.

J. C. Bonham No. 6 Cameron Lbr. Co., Drlg. 178 ft.

Cherokee County

R. Bunn Drlg. Co. No. 1 Bolin, W. A. Walter Sur., 3 mi. SE of Lone Star; 3,000 ft. E of Bunn No. 2 Bounds. Drlg. 1,280 ft.

Falls County

M. H. Hayes No. 1 A. Garrett, J. M. Sanches Sur., 2 mi. NE of Lott field. Comp. 30 B.O.P.D.

Freestone County

G. Shryock No. 1 M. S. Clark, M. D. Canton Sur., 8 mi. NW of Teague. S.D. 1,750 ft.

Gregg County

Humble-Gulf No. 1 Porter Horton, H. G. Hudson Sur., 3½ mi. SW of Longview; 7,500-ft. test. Drlg 6,030 ft.

Henderson County

McElreath & Suggett No. 1 T. L. Dean, C. M. Walters Sur., 1 mi. W of Athens. Drlg. 3,580 ft.

Texas Co. No. 1 R. L. Tarkington, W. K. Newell Sur., ½ mi. SE of outpost to Flag Lake pool. Top sd. 3,008½ ft.; T.D. 3,032 ft. Est. 1,000,000 ft. gas.

Hill County

J. M. Russell No. 1 H. F. Holland, S. C. White Sur., 1 mi. SE of Abbott. D.&A. 622 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.

W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. S.D.; Sd. 5-in. 3,008 ft.

J. F. McLaughlin No. 1 Wood-Nash, J. C. Cortez Sur., ¾ mi. SE of Scurry. Drk.

W. G. Martin No. 2 W. G. Martin, W. F. C. Butler Sur., 2½ mi. NE of Kemp. Drlg. 2,070 ft.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. R.U.

Leon County

Lone Star Gasoline Co. No. 1 Steve Pate, D. J. Haskins Sur., 8 mi. SE of Buffalo gas area. Drlg 2,260 ft.

T. J. Tucker No. 1 Same Vane, James Webb Sur., 4½ mi. SE of Keechi. S.D. 100 ft.

Wynne Drlg. Co. No. 1 H. L. Brown, Joseph Brown Sur., ¾ mi. NW of Keechi and on Sinclair Prairie farmout. W.O.C. 620 ft.

Limestone County

J. A. Johnston No. 2 Speight, H. Varella Sur., 5 mi. S of Mexia. D.&A. 3,701 ft.

Strowd Gas Co. No. 1 S. Adkins, A. Varella Sur., 1 mi. W of Groesbeck. Drlg. 420 ft.

McLennan County

J. C. Kilgore No. 1 Tom Motis, R. D. Price Sur., 4 mi. E of town of West; shallow test. Loc.

Lisie Steele No. 1 C. H. Cherry, M. Martinez Sur., 4½ mi. SE of Waco. S.D. 1,300 ft.

Madison County

W. C. Holleman No. 1 D. C. Cannon, J. P. Phillips Sur., 7 mi. NW of Madisonville. S.D. 25 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. Loc.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co.; G. S. Parks sur.; 17 mi. N of Clarksville. R.U.

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. Drlg. 1,015 ft.

Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 555 ft.

C. E. Whitehead No. 1 R. H. Ringwald, A. Moore Sur., 1 mi. NW of Manchester. S.D. 630 ft.

Rusk County

Drake Drlg. Co. No. 1 R. L. Needham, J. H. Chambers Sur., 3 mi. S of Laneville, Drk.

Smith County

Combest et al No. 1 Dora Kendall; J. Williams Sur., 1¼ mi. SW of Jamestown. S.D. 3,226 ft.

Van Zandt County

W. S. King No. 1 Edna W. Watson, M. G. Whitaker Sur., 5 mi. S of Grand Saline. Drlg. 2,000 ft.

NORTH TEXAS WILDCATS

Archer County

Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Drlg. deeper to 5,129 ft. and W.O.C.

Panhandle Ref. Co. et al No. 1 H. O. Prideaux, A. Rohus Sur. A-1126. 6⅝-in. 3,254 ft.; S.L. 4,632-41 ft.; Schlumberger.

Louis Sikes et al No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; Tstd. S.W.; S.D.O. 4,204 ft.

Sinclair Prairie No. 1 J. A. Hood, Blk. 18, A.T.N.C.L. Sur. R.U.R.

Baylor County

H. F. Wilcox No. 1 J. E. Fritz, D. Barlow Sur. A-10. R.U.R.

Clay County

Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. 6⅝-in. 5,990 ft.; S.L. 5,994-6,016 ft.; T.D. 6,354 ft.; P.B. and treating acid.

Cooke County

Bin Indian Oil Co. No. 1 Alexander, T. Clevenger Sur., Abst. 1133. Drlg. 500 ft.

Sinclair Prairie Oil Co. No. 1 Mrs. J. D. Putnam, T. W. Ward Sur. No. A-1089. B.S.S.O. 4,970-83 ft.; tstg. show oil and S.W.; 9⅝-in. 5,166 ft.; drlg. 5,198 ft.

Grayson County

O. L. McDougal No. 1 Jackson, H. Coffee Sur., Abst. 204; 4,000-ft. test. Spud. and S.D.

Mildred Oil Co. No. 1 L. C. Neatherly, Chas. Quillen Sur. S.S.O. 3,972-3,905 ft.; T.D. 4,043 ft.; S.D.O.

Jack County

Benoil Co. No. 1 E. Hagg, Ain. McDonald Sur. A-1135. Drlg. 3,020 ft.

Noah Daves No. 1 K. D. Baker, sec. 2709, T.E.&L. Sur.; 4,000-ft. test. S.D.O. 2,-285 ft.

S. W. King No. 1 Ben Gunter, S. Pritchard Sur. A-459. 3,200-ft. test. Loc.

Knox County

Rosser Pendleton and I.T.I.O. No. 1 G. H. Beavers, Sec. 151, H.&T.C. Sur. Drlg. 3,240 ft.

Montague County

L. T. Burns No. 1 Maggie Mitchell, J. W. Massie Sur. A-463. Loc. 4,000-ft. test.

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. Drlg. 1,100 ft.

Sinclair Prairie No. 1 Hill, Blk. 71, L. C.S.L. Sur. Drlg. 1,460 ft.

Wichita County

Carey & Carey No. 1 J. A. Kemp, Blk. 59, K.W.V.F.L. Sur. Drlg. 2,275 ft.

Continental Oil Co. No. 1 State Ins. Asylum, Blk. 1, Cherokee Co. Sch. Ld. 6⅝-in. 5,075 ft.; SL 5,076-5,128 ft.; drlg plug; flwd. 90 bbls. in 3 hrs.; trtd. with 8,000 gal acd.; est. 150 B.P.D.; S.O. 5,344-81 ft.; tstg.

Wilbarger County

Consolidated Oil Co. No. 1 Ancell, sec. 35, H.&T.C. Sur. 10-in. 112 ft.; drlg. 3,985 ft.

Phillips Pet. Co. No. 1 M. Servatius, Sec. 78, H.&T.C. Sur., Blk. 14. Drk.

Young County

Homestead O. & G. Co. No. 1 Stephens, M. Dobbs Sur., Abst. 1416. Drlg. 3,400 ft.

Horwitz & Oxdom No. 1 C. J. Tasch B. sec. 248, T.E.&L. Sur. 6⅝-in. 4,113 ft.; drlg. L. 4,243 ft.

R. V. Tidewell No. 1 J. N. Ivey, F. L. Green Sur., Abst. 105. Drlg. 891 ft.

Union Prod. Co. No. 1 Corley, J. F. Clard Sur., Abst. 2202. Drlg. S.L. 4,294 ft.

Wise County

H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Pits.

WEST CENTRAL TEXAS DISTRICT

Brown County

Hightower O. & R. Co. No. 1 Payne, sec. 31, H.&T.C. Sur. Drlg. 1,434 ft.

Whatley No. 1 Browder, C.T.R.R. Sur., Abst. 281. Rng. 6⅝-in. 1,960 ft.

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W. L. 1,880 ft. from N. L, sec. 370, Geo. W. Denton Sur.; Ordovician test. D.&A. 4,580 ft.

Dobbs Oil Co. No. 1 Finley, sec. 75, Bayland Orphans Home Ld. U.R. 1,128 ft.

J. H. Howell No. 1 E. L. Vestal, 1,149 ft. E line, 1,000 ft. N line. Jesse Dyson Sur., 2 mi. NE Cross Plains. Drlg. 3,-792 ft.

Johnson et al No. 1 B. E. Higgins, Sec. 39, D.&D. Sur., Abst. 886. Loc.

Coleman County

Anzac Oil Corp. No. 1 Burk, A. Williams Sur. Comp.; 10 B.O.P.D.

F. L. and E. R. Cooper No. 1 W. R. Stockard, 330 ft. from NL, 330 ft. from WL, N½ SE¼ sec. 23, T.&N.O. Sur. Rotary to 3,650 ft.; comp.; 40 B.O.P.D.

Garrett Oil Co. No. 1 W. S. Smith et al, 4 mi. SE of Coleman, J. Thiele Sur. H.F.W.; est. 2,000,000 ft. gas; S.D.O. 2,306 ft.

Hoffman & Page No. 1 T. A. Drake, J. H. Woods Sur. No. 46. Drlg. 1,315 ft.

Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. S.D. 415 ft.

Bob Murray No. 1 Dibrell, H. Kigan Sur., near Camp Colorado. P.B. 2,840 ft.; old T.D. 2,865 ft.; S.D.

Comanche County

Compton No. 1 Griffin, Blk. 2, Comanche Co. Sch. Lds. S.D. 2,280 ft.

Elmore No. 1 Moorman, sec. 37, D.D.& A. Sur., 3 mi. NE of Sipes Spgs. M. I.M.

Loraine No. 1 Haile, sec. 9, Blk. 3, H. &T.C. Sur. Tstg. 2,707 ft.

Sells Pet. Co. No. 1 Smith, sec. 12, Blk. 2, H.&T.C. Sur. Prep. tstg. 2,713 ft.

Eastland County

Baker No. 1 Mullroy, sec. 1, Wm. Ahrenbeck Sur., 5 mi. NW of Rising Star. Comp.; 30 B.O.P.D.

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 1,100 ft.

Hickok P. & D. Co. No. 1 Penn, Sec. 468, S.P. Sur. Rig.

Hack Whiteside No. 1 A. K. Anderson, SE of Rising Star. Loc.

Erath County

McGee Dev. Co. No. 1 Till Robinson, Wm. Ashworth Sur., 2 mi. SE of Desdemona. Drlg. 2,895 ft.

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 1,340 ft.

Fisher County

S. and D. Daube No. 1 Hardy, Sec. 49, Blk. 2, H.&T.C. Sur. Drlg. 3,360 ft.

Forest Dev. Co. No. 1 Morrow, sec. 48, Blk. 2, H.&T.C. Sur. Tstg. 4,254 ft.

Owens-Snebold & A. C. Varner No. 1 J. H. Millsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec 61-2, H.&T.C. Sur. D.P. stk. 1,810 ft., T.D.

T. G. Shaw Oil Corp. and Texas Co. No. 1 John Stribling, sec. 110, Blk. 3, H.&T.C. Sur. Cg. 4,158 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. No. 51. S.D.; csg. 329 ft.

Haskell County

T. P. Coal & Oil Co. No. 1 Livengood, Pardue pool outpost. Tstg. 2,796 ft.

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W¼ sec. 104, Indianola Ry. Sur. S.D. 3,089 ft.; sulfur wtr.

Forest Dev. Co. No. 1 Bankers Life Co., J. F. Morgan Sur. No. 59. T.A. 3,855 ft.

Heenam & Coe No. 1 Jones, Corryell Co. Sch. Lds. Drk.

Indian States No. 1 Jones, Coryell Co. Sch. Lds. Drlg. 3,125 ft.

Mariand Drake No. 1 Cob, J. F. Benson Sur. No. 96. Loc.

Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. Loc.

W. A. Stiles et al No. 1 May Cook, Sec. 89, B.B.B.&C. Sur., 10 mi. W of Stamford; 6,000-ft. test. Loc.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, sec. 191, Lemuel Andrews Sur. U.R. 1,-750 ft.

Dunigan Bros. and Fred Hyer No. 1 Gaither. 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. U.R. 3,473 ft.

R. B. Farris No. 1 Chas. Donohoo, 220 ft. from S and E lines. N½ sec. 5, B.B.B. &C. Sur. S.D. 2,090 ft.

S. C. Herring No. 1 B. L. Ellis, 330 ft. fr. N and E lines, SE¼ sec. 8-15, T.&P. Sur. Loc.

Humble O. & R. Co. No. 1 Huddleston, sec. 49, Blk. 18, T.&P. Sur. Drlg. 2,-450 ft.; U.R. 2,544 ft.

King et al No. 1 Stover, D. H. Stover Sur. No. 7. Drlg. 1,240 ft.

C. B. Lynn No. 1 C. P. Poe, L. Katz Lee Sur. No. 335. Drlg. 2,548 ft.

Montray & King No. 2 G. Martinez, Martinez Sur. No. 195. Drlg. 1,932 ft.

Rex Outlaw No. 1 M. A. Moore, Sec. 10, B.A.L. Sur. Drlg. 1,850 ft.

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Illinois Fields

(Continued from Page 90)

tion 24-1n-1w, sand at 1,368-79 feet, shot with 10 quarts, pumped 50 bbls.; Ryan & Anderson No. 1 Koelling, NE cor. SW NE NE Section 24-1n-1w, sand at 1,371-83 feet, shot with 10 quarts, pumped 80 bbls.; Harry Rogers No. 1 Wilderman, SE cor. NE NE Section 24-1n-1w, sand at 1,374-89 feet, pumped an estimated 50 bbls.; Quinsberry Drilling Co. No. 1 Tatum, SE NE NE Section 24-1n-1w, sand at 1,374-92 feet, shot with 10 quarts, lost the hole and the well was abandoned; Hawley Oil & Gas Co. No. 1 Mussel, NE NE NE Section 24-1n-1w, sand at 1,364-92 feet, shot with 30 quarts, pumped 125 bbls.; W. J. Hester No. 1 Stanford, NE NE NE Section 24-1n-1w, sand at 1,363-75 feet, shot with 10 quarts, pumped 25 bbls.; Shell Petroleum Corp. No. 2 Geary-Criley, NE NE NE Section 2-1n-1w, sand at 1,320-49 feet, shot with 21 quarts, pumped 106 bbls.; Carpenter & Goldberg No. 3 C.B.&Q.R.R., NE cor. NW SE Section 1-1n-1w, sand at 1,342-52 feet, pumped 165 bbls.; Adams Oil & Gas Co. No. 4 Ed Felton, SE NE NW Section 1-1n-1w, sand at 1,326½-48 feet, shot with 10 quarts, pumped 81 bbls.

In Wayne County, the Texas Co. No. 1 Koontz, NW NE SW Section 33-2s-7e, had McClosky pay at 3,311-27 feet, and flowed 1,149 bbls. of oil in 16 hours, seven hours through casing and nine hours through tubing; Texas Co. No. 4 Silverman, C E half NW SW Section 16-3s-7e, had pay at 3,297-82½ feet and flowed 300 bbls. in 24 hours.

One of the larger producers completed the past week in the Illinois fields was Pure Oil Co. No. 1 Tetrick, C W half SE SW Section 4-2n-8e, in the Clay City pool, Clay County. It topped pay at 2,976 feet, was bottomed at 3,042 feet and was completed for initial production of 940 bbls. of oil daily.

Other wells completed in the Clay City area included Pure Oil Co. No. 5 Schrugham, C E half NW NW Section 9-2n-8e, pay 2,985 feet, total depth 3,040 feet, acidized, pumped 556 bbls. of oil; same company's No. 1 Bunn B, C W half NW SE Section 16-2n-8e, pay 3,000 feet, total depth 3,050 feet, acidized, pumped 508 bbls. of oil; same company's No. 2 Ullom, C E half SE SW Section 16-2n-8e, pay 3,006 feet, total depth 3,050 feet, acidized, 875 bbls. of oil.

In the Lake Centralia area, Marion County, Texas Co. completed No. 3 Williams, SE SW SW Section 32-2n-2e, for an estimated 600 bbls. of oil daily through choke. It had Benoist sand at 1,658-94 feet, total depth.

Loper and others No. 1 McRoberts, SW SE NE Section 32-2n-2e, found Benoist sand at 1,735-50 feet, total depth, and flowed 624 bbls. of oil daily, through choke.

Additional Marion County completions were J. C. Menhall No. 3 Illinois Central, NW SE SW Section 18-1n-1e, Benoist sand 1,355-73 feet, shot, pumped 239 bbls. of oil; Giffert Drilling Co. No. 1 Ryan, NE NW NW Section 18-1n-1e, total depth 1,370 feet, hole junked; Paul Rossi No. 1 Home Building & Loan, NW SW NW Section 19-1n-1e, Benoist sand 1,390-97 feet, total depth, dry and abandoned; Sgro No. 1 Freant, SW NW NW Section 19-1n-1e, Benoist sand 1,373-86 feet, total depth, shot, pumped 144 bbls. of oil; Carpenter & Goldberg No. 1 Halsapple, NE NE SE Section 25-2n-1e, Benoist 2,010 feet, total depth 2,021 feet, dry and abandoned; Joe Hassett No. 1 Hanseman, SW SE SW Section 6-1n-1e, total depth 1,645 feet, dry and abandoned; Bert Field No. 3 M.&I.R.R., SE SW SW SW Section 18-1n-1e, Benoist 1,352-85 feet, total depth, shot, pumped 288 bbls. of oil and some water daily.

OHIO

FINDLAY, Ohio, Sept. 5.—In the central Ohio area, Stark County, yielded a 2,000,000-foot gas well. In Lake Township, White Producing Co. No. 1 Emma Holbenor, Section 34, found the pay in the Clinton sand at 4,540-77 feet.

In Athens County, Canaan Township, Speary Oil & Gas Co. No. 4 R. A. Smith, Section 12, had 200,000 feet of gas in the Stray sand at 560-74 feet. In Dover Township, Kachelmacher Oil & Gas Co. No. 3 New York Coal Co., Fraction 1, found the Berea sand dry at 1,052-76 feet.

In Guernsey County, Monroe Township, Hartman Oil & Gas Co. No. 4 Harley Hunnell, Section 9, is a small gas well in the Berea sand at 1,056 feet. In Richland Township, John Bindas and others No. 1 W. E. Rose, Section 22, was dry and abandoned at 1,327 feet.

In Knox County, Jackson Township, C. A. Davis No. 2 A. J. Jones, Section 10, is a small Berea gas well at 934-39 feet.

In Licking County, Fallsbury Township, Hulse & Kuntz No. 1 Ora Booth, Section 18, made 85 bbls. of oil the first 24 hours after a shot in Clinton sand at 3,018-60 feet. In Perry Township, G. H. Long No. 4 Granville Ashcraft, Section 2, made 100,000 feet of gas and 4 bbls. of oil the first day after a shot in Clinton sand at 2,900-55 feet.

In Lorain County, Ridgeville Township, Obermiller Brothers No. 1 Mathias Myers, Lot 31, is a small gas well in the Clinton sand at 2,407 feet.

In Noble County, Beaver Township, Chaseville Oil Co. No. 1 C. P. Cronenbitter, Section 3, is good for 100,000 feet of gas from the first Cow Run sand at 370-90 feet.

In Wayne County, Chippewa Township, Winger and others No. 1 S. H. Galehouse, Section 18, drilled through the Clinton sand to 3,531 feet for 213,000 feet of gas.

In Washington County, Ludlow Township, Rex Oil & Gas Co. No. 6 John Whittacre, Section 4, was deepened from the Injun sand to the Squaw sand at 1,421-35 feet, and is making 4 bbls. of oil a day.

Lima Field

The Sun Oil Co. used a 50-quart shot in the Green sand oil showing in its No. 1 Tiffan Business University, Seneca County, Clinton Township, Section 7. The results have not been determined as fishing is now in progress for tools lost while cleaning out. In Jackson Township, same county, J. V. Wicklund Development Co. No. 1 Martin Hammer, Section 22, topped the Trenton at 1,292 feet and is having trouble with a bad hole at 1,390 feet.

California Fields

(Continued from Page 92)

feet and then perforated at 3,215-75 feet and at 3,365-3,445 feet and the well brought in flowing through a 24/64-inch bean.

Standard Oil Co.'s discovery well in the Cat Canyon district of Santa Barbara County established a maximum potential of 765 bbls. per day on a sustained production test but has since been beaned back to 350 bbls. daily. Drilling operations in the Santa Maria Valley field have declined to three drilling wells and by next week should be down to two strings as one of the wells now drilling should be completed in the meantime.

Kern County

In the Fruitvale field of Kern County, Western Gulf Oil Co. No. 38-B Kern County Land was finished flowing 341 bbls. of clean 17.6-gravity oil per day from 3,012 feet and No. 2 Guisti of Pacific Oil & Gas Co. was completed pumping 217 bbls. of 17.3-gravity oil cutting 6 per cent from 2,964 feet.

Two very small wells were completed in the Kern River field although No. 25-3-C of Kern Oil Co. subsequently built up to 180 bbls. of 14.6-gravity oil daily from 1,965 feet. Helm & Smith completed No. 6-A pumping 10 bbls. of 14.5-gravity oil cutting 10 per cent daily from 670 feet. In the Round Mountain field of Kern County Honolulu Oil Corp. finished No. 49 in Section 20-28-29 pumping 570 bbls. of 21.9-gravity oil cutting 8 per cent daily from 1,804 feet. This well was finished with 433 feet of 6⅝-inch liner including 386 feet of perforated landed on bottom. Up in the Kettleman North dome field which spreads across Fresno and Kings counties, Kettleman North Dome Association recompleted No. 85-34-J in Section 34-21-17 flowing 520 bbls. of 31.8-gravity oil per day on a compressor after redrilling and deepening the hole from 8,090 feet to 8,470 feet. In addition to the oil produced the well is making 852,000 feet of net formation gas. The hole was finished with 840 feet of 4¾-inch liner carrying perforations at 8,227-65 feet and at 8,295-8,437 feet.

East Texas Fields

(Continued from Page 94)

Bailey B, 2,755-2,870 feet, 160 bbls. W. R. Dearing No. 1 E. Mitchell B, 3,070-3,162 feet, 87 bbls. Deka Oil Co. No. 4 Charles Henderson, 401 feet, dry. B. C. Gilmore No. 2 J. M. Martin, 599 feet, dry. Grace & Barrow No. 1 Mary Hoefle, 479 feet, dry. Hamilton Petroleum Co. No. 1 J. S. Rhodes B, 2,367-2,389 feet, 25 bbls. Hill & Hill No. 2 T. J. Jones, 2,908-3,100 feet, 300 bbls.; No. 1 A. B. Kuykendall B, 3,075-3,229 feet, 25 bbls. S. F. Holmes No. 1 C. C. Bloodworth, 465 feet, dry. Martex Oil Co. No. 4 A. B. Kuykendall B, 2,986-3,135 feet, 320 bbls.; No. 5 A. B. Kuykendall B, 3,140-3,156 feet, 253 bbls. McKee & Mullens No. 3 Robert Wilson, 418 feet, dry. Nelson Oil Syndicate No. 3 J. F. Henderson, 2,755-2,776 feet, 406 bbls. C. B. Pruett and others No. 6 M. Covington, 320-45 feet, 10 bbls. Roy Rogers, Jr., No. 3 J. H. Shown, 602 feet, dry. J. C. Richardson No. 2 W. H. Smith, 300-25 feet, 5 bbls. J. B. Sneed & Co. No. 4 J. M. Bloodworth, 300-24 feet, 7 bbls.; No. 1 First State Bank of Bryson, 2,650 feet, dry. Mrs. J. A. Spradling and others No. 1 W. H. Smith, 387 feet, dry. Sullivan Oil Co. No. 4 Swasey, 356-86 feet, 15 bbls.

Knox County

R. N. Hamilton No. 1 C. H. Burnett, 2,040 feet, dry.

Montague County

Bridwell Oil Co. No. 1 Mrs. F. Hutson, 1,803 feet, dry. Continental Oil Co. No. 16 S. J. Hott, 1,600-27 feet, 85 bbls. Seitz & Comegys No. 7 J. W. King, 1,738-45 feet, 123 bbls. J. W. Sorrell No. 1 J. E. Walthall, 3,781 feet, dry.

Wichita County

Joe S. Anderson No. 1 J. J. Perkins, 3,799-4,051 feet, 50 bbls. Jack C. Barnard No. 1 Fassett & Tuttle, 3,920-4,004 feet, 480 bbls. Mae Belcher No. 2 Love, abandoned location. Bell Oil & Gas Co. No. 37 M. J. Powell, 1,250-78 feet, 10 bbls. Bolin & Whittington No. 5 J. L. and T. J. Waggoner, 3,947-3,972 feet, 600 bbls.; No. 8-A Waggoner, 923 feet, dry. King Oil Co. No. 1 Shaw & Rathke, 2,629-2,679 feet, 608 bbls. Magnolia Petroleum Co. No. 143 H. Reilly, 2,508 feet, dry. R. W. Gutzler No. 4 J. Jennie, 347 feet, dry. Bridwell Oil Co. No. 4 J. S. Bridwell, abandoned location. Burk Royalty Co. No. 4 Sue Mitchell, abandoned location. J. W. Akin No. 2 George W. Deiner, Jr., 2,020 feet, dry. The Bonner Co. No. 1 J. A. Watkins, abandoned location. R. W. Gutzler No. 2 J. Jennie, 823-30 feet, 6 bbls. The Bonner Co. No. 2 W. L. Hodges, 3,853-3,950 feet, 800 bbls. Bridwell Oil Co. No. 3 J. S. Bridwell, 4,075 feet, dry.

Al Buchanan & Blancho No. 2 Waggoner, 3,744-3,800 feet, 488 bbls. Bridwell Oil Co. No. 2 J. S. Bridwell, 3,850-3,904 feet, 568 bbls.; No. 5 J. R. Pace, 3,685-3,813 fee, 680 bbls. British American Oil Producing Co. No. 1 N. H. Martin Lease No. 2, 3,582-3,860 feet, 300 bbls. P. Browning No. 3 G. W. Lewis, 3,727-3,829 feet, 728 bbls. Consolidated Oil Co. No. 12 W. P. Ferguson, 3,680-3,825 feet, 2,760 bbls. Chapman & McFarlin No. 5 Waggoner A, 3,772-3,828 feet, 606 bbls. Continental Oil Co. No. 2-R J. L. Waggoner D, 3,766-3,800 feet, 456 bbls. Dorian & Mitchell No. 5 Sue Mitchell, 3,804-3,855 feet, 1,360 bbls.; No. 4 Sue Mitchell, 1,500-14 feet, 50 bbls. Deep Oil Development Co. No. 2 J. A. Kemp, 3,745-3,841 feet, 720 bbls.; No. 19 Munger, 3,770-3,881 feet, 640 bbls.; No. 3 Munger F, abandoned location; No. 4 J. R. Pace, 3,810-3,915 feet, 604 bbls. Dorian & Mitchell No. 6 Sue Mitchell, 460 feet, dry. Douglas Producing Co. No. 22 L. P. Douglas E, 1,070 feet, dry.

H. D. Egger No. 2 D. R. Preston, 3,833-3,864 feet, 888 bbls. E.C. Oil Co. No. 1 A. W. Burnsite, 3,831-4,030 feet, 2,000 bbls.; No. 1 W. L. Hodges A, 3,670-3,814 feet, 720 bbls.; No. 2 W. L. Hodges A, 3,700-3,830 feet, 720 bbls.; No. 2 G. W. Lewis A, 3,805-3,813 feet, 720 bbls. Fain-McGaha No. 4 E. P. Griffin B, 3,750-3,846 feet, 1,608 bbls. J. E. Farrell No. 20 Waggoner A, 3,810-64 feet, 640 bbls.; No. 21 Waggoner A, 3,804-3,852 feet, 736 bbls. Forbess & Golden No. 8 C. A. Mertens A, 580 feet, dry. P. H. Flynn and others No. 1 George Proctor, 1,055 feet, dry. P. T. Fulwood No. 2 J. L. Waggoner, 3,750-3,769 feet, 480 bbls. Geier Brothers & Jackson No. 4 Sue Mitchell B, 3,808-3,876 feet, 708 bbls.; No. 2 D. R. Preston, 2,284 feet, junked.

W. H. Hammon No. 10 S. H. McCarty E, 3,620-3,820 feet, 1,372 bbls. Hammon-Hanlon-Buchanan, Inc., No. 11 Fassett & Tuttle, 3,900-69 feet, 630 bbls. Hubble Production Co. No. 1 R. J. Bradley, 3,797-3,974 feet, 5 bbls.; No. 2 L. C. Denny, 3,770-3,890 feet, 384 bbls. Kadane-Griffith Oil Co. No. 7 Mrs. Anna Mangold, 3,690-3,785 feet, 1,536 bbls. Melat & Graham No. 4 Munger A, 3,748-3,880 feet, 1,028 bbls. W. B. Omohundro No. 11 W. L. Hodges, 3,656-3,800 feet, 750 bbls. Omohundro & Harvey No. 1 D. R. Preston, 4,013 feet, dry. Sam K. Vierson No. 1 R. L. Kempner C, 3,816-3,840 feet, 1,072 bbls. S. H. Walton No. 1 C. A. Allingham, 500 feet, dry. WE Production Co. No. 4 L. E. Denny, 3,780-3,905 feet, 720 bbls. Joe A. Worsham No. 2 W. F. Hamilton, 3,761-3,777 feet, 824 bbls.; No. 2 D. R. Preston, 451 feet, dry.

Wilbarger County

Dearborn Oil Co. No. 1 Mrs. S. A. Dill and others, 2,863 feet, dry. Paradise Oil Co. No. 4 W. T. Waggoner B, 1,537-54 feet, 230 bbls.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Sept. 3 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	2,400	67¼	65	67¼	Amerada Corp.	788,675	N.P.	50cQ	7-30-38	$2.00	114⅞	51½	125½	75
27⅜	17⅜	4,300	22⅞	22⅛	22⅞	Atlantic Refining	2,663,999	$25	25cQ	9-15-38	1.00	37	18	35⅛	26⅝
23⅜	12⅛	2,100	20½	19	20	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.00	43⅝	10⅛	38⅛	21
21⅜	10⅛	10,000	18	16⅝	18	Barnsdall Oil Co.	2,250,344	$5	25cQ	8-1-38	1.00	35¼	10	28¼	14⅛
10¾	7	18,800	9¼	8⅝	9	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	8-15-38	.90	17⅞	7	17¼	11⅛
35⅝	21¼	8,200	30½	29⅜	30	Continental Oil of Delaware	4,682,583	$5	25cQ	9-30-38	1.50	49	24	44⅞	28⅛
9⅜	5	4,000	7⅜	7½	7¾	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	2,900	18	17¼	17½	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	1.50	35⅜	14	30⅞	17¼
17¾	10⅝	100	14¾	14¾	14¾	Mission Corporation	1,382,945	$10	$1	6-29-38	1.25	34	15	29⅞	16⅜
23	14⅛	5,000	17⅝	16½	17⅝	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	9	7,400	10⅜	10	10¼	Ohio Oil Co.	6.563,377	N.P.	50c	12-15-37	1.00	22⅞	8	18	12⅛
15⅞	10¼	400	12½	12	12½	Pacific Western Oil	1.000.000	N.P.	75c	12-15-37	.75	29¾	11⅜	23½	11⅜
9¼	7	100	7½	7½	7½	Pan American Pet. & Trans.	1.702,945	$5	$1 •	12-21-37	1.00	17¼	7	20⅝	12¼
44⅜	27¼	7,900	40¾	38½	40¼	Phillips Petroleum	4,449,052	N.P.	50cQ	9-1-38	2.75	64	30⅛	52⅜	33⅛
25⅜	15	1,600	23¼	22½	23¼	Plymouth Oil Co.	1,029,800	$5	35cQ	6-30-38	1.65	29⅞	13	27⅜	11⅞
13½	8¼	9,900	10½	10	10⅜	Pure Oil Co.	3.285,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
8⅞	5	10,500	7⅞	7⅜	7⅝	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	.25	6½	4¼	..	..
27½	15½	500	22⅛	21½	21¾	Seaboard Oil of Delaware	1.244,383	N.P.	25cQ	9-15-38	1.00	54⅛	16	44	30⅛
18⅜	10	2,300	15⅞	14¾	15⅝	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.00	34⅝	14⅞	28¼	14⅝
34¾	18½	3,100	26½	24⅞	26¼	Skelly Oil	1.003,949	$15	50c	6-25-38	1.50	60⅝	26½	47⅞	19½
16⅜	10¾	19,900	14	13¼	14	Socony-Vacuum	31,151,071	$15	25c	9-15-38	.80	23¼	13	17½	12⅛
34⅞	25⅛	10,300	30½	29⅝	30¼	Standard Oil of California	13,014,754	N.P.	35cQ†	9-15-38	2.00	50	27¼	47⅝	35
35½	24¾	8,400	30⅜	29½	30⅛	Standard Oil (Indiana)	15,267,030	$25	25cQ	9-15-38	2.30	50	26½	48½	32⅝
35½	22½	No sales	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
58⅜	39⅜	16,400	54½	51	54	Standard Oil of New Jersey	26.224,767	$25	$1SA†	6-15-38	2.50	76	42	70⅜	51⅛
59	45	800	55	52	55	Sun Oil	2,316,484	N.P.	25cQ	9-15-38	$1 & 8% Stk.	77½	44½	91	70
4¼	1¾	6,200	3¼	3	3¼	Superior Oil Corp.	1.388,079	$1			....	7¾	1½	6¾	3
49⅝	32⅝	15,900	45⅞	42⅜	45⅞	Texas Corp.	10,875,006	$25	50cQ	10-1-38	2.25	65⅛	34¾	55¼	28⅞
5¼	2⅝	3,300	4⅜	4	4⅜	Texas Gulf Producing Co.	888,138	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
12½	7	8,400	11	10	10⅝	Texas Pacific Coal & Oil	888,237	$10	10c	9-1-38	.40	16⅝	5⅜	15¼	7½
15¾	10⅛	7,600	13⅛	12½	13	Tide Water Associated	6,369,175	$10	25cQ	9-1-38	1.20	21⅝	13½	21⅜	14⅜
22½	17⅛	2,800	20⅞	20	20⅛	Union Oil of California	4,666,270	$25	30cQ	8-10-38	1.40	28¼	17½	28½	20⅜
23½	20	200	21¼	21¼	21¼	Union Tank Car Co.	1,200,000	N.P.	30cQ	9-1-38	1.60	31½	22	31⅝	22⅝
3½	1⅝	700	3⅛	2⅝	2¾	Wilcox Oil & Gas	506.522	$5	....	5-10-28	....	6¼	1¾	5¼	2⅜

•Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock

New York Curb Exchange

1938 High	1938 Low	Week ending Sept. 3 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	5	3,700	10	9⅜	10	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.40	10	6⅝	..	..
10¼	5⅛	800	6⅞	6⅛	6⅛	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13⅛
39	28¼	200	30	28	30	Buckeye Pipe Line Co.	200,000	$50	25c	9-15-38	3.75	51½	36	50	39⅝
113¾	97	50	113¾	113¾	113¾	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-27-38	7.00	123	95½	124¾	105
11	7¾	3,800	7¾	7	7	Cities Service (new)	3,714,317	$10	....	6-1-32	....	5⅝	1½	7⅜	3
2⅜	⅞	1,900	1½	1⅜	1⅜	Cosden Petroleum	462,551	$1	....	.....	....	5½	1½	4½	1⅛
27½	17½	3,600	22	20¾	20¾	Creole Petroleum	6,975,383	$5	50cSA†	6 10-38	1.00	38⅝	20¼	39	19⅜
10¼	5½	100	9	9	9	Darby Petroleum	351,390	$5	25cSA	7-15-38	.50	18⅝	6½	18⅛	9
3½	2	300	2⅛	1⅞	1⅞	Derby Oil & Refining	263,162	N.P.	..	.....	....	8⅜	2¼	6⅜	1⅜
31	21	No sales	..	..	..	Eureka Pipe Line	50,000	$50	50c	8-1-38	4.00	47½	24½	47½	38½
46⅞	33	4,800	42¼	39¼	42¼	Gulf Oil Corp.	9,076,202	$25	25cQ	10-1-38	1.00	63⅛	33	59	36
72⅝	56	2,400	67	65⅝	66¼	Humble Oil & Refining	8,987,840	N.P.	62½c	10-1-38	2.00	87	54⅞	80	57
19½	15	3,100	16⅞	16½	16⅞	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	1.25	24¼	14½	24½	19⅜
9⅜	6⅝	300	8½	7½	7½	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9⅜	5½
31¼	23	3,400	26	25½	26	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	2.50	39½	23½	39⅝	32⅝
5	3	600	3⅝	3½	3½	Kirby Petroleum Co.	500.000	$1	10c	4-15-38	....	8¾	2⅜	5⅜	2⅝
25⅛	15⅝	2,300	22¾	22	22	Lion Oil Refining	434,820	N.P.	25cQ	7-25-38	1.50	34	12½	17¾	7⅜
10¼	6⅝	1,800	9½	9	9¼	Lone Star Gas	5,533,747	N.P.	20c	8-20-38	.60	14¼	5¼	14¼	9⅜
9⅜	6½	4,300	7¼	7	7⅛	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	9-15-38	.50	15¼	6⅜	15⅝	9⅜
9¼	6⅜	300	8⅜	8¼	8¼	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5⅜	4½	1,000	5⅛	5	5	Mountain Producers	1,593,584	$10	30cSA	6-15-38	.60	7⅞	4⅛	8⅜	5
14⅝	11⅝	2,800	12	11¾	12	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-38	1.00	19½	12	23	17⅜
9¼	7¼	No sales	..	..	..	National Transit	509,000	$12.50	35cSA	6-15-38	1.00	12½	7¼	15⅜	9¼
2⅝	1½	200	1⅝	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅝	3⅞	6¼	4¼
6	4	No sales	..	..	..	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12¾	5¾	9¾	4⅞
7⅜	3¾	6,500	4⅝	4½	4⅝	Pantepec Oil	2,441,142	$1	....	.....	....	9⅝	2⅜	10⅛	3¼
3½	1⅝	700	2¼	2	2	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	300	3	2¾	3	Ryan Consolidated	296,931	N.P.	..	.....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	900	34	33	33¼	South Penn Oil	1,000,000	$25	37½cQ	9-30-38	3.65	56	35	44	32½
22¼	19	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	7-1-38	2.00	42	20	60	44
18¾	15	200	18¼	18⅛	18¼	Standard Oil of Kentucky	2,604,790	$10	25c	9-13-38	1.50	21⅛	14¾	23⅜	17⅛
8⅜	6⅛	400	8⅜	8	8⅜	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13⅜	8	14⅝	11
22⅜	16¼	1,900	21¼	20	20¼	Standard Oil of Ohio	753,740	$25	25c	9-15-38	1.50	45	16	40	21⅝
3¼	2⅛	2,800	2⅞	2⅝	2¾	Sunray Oil	2,006,176	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
5	3½	500	5	4½	5	Texon Oil & Land	936,024	$2	15cQ	9-30-38	.45	7⅝	2	9⅜	5⅜
7⅝	4¼	200	5½	5½	5½	Transwestern Oil Co.	750,000	$10	....	.....	....	13⅞	4⅝	..	..
5¼	2¾	5,500	3¾	3⅜	3½	United Gas Corp.	7,818,959	$1	....	.....	....	13⅜	3	10⅜	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

J. J. CONRY, president of the Carter Oil Company, Tulsa, with MRS. CONRY and their son, J. J. CONRY, JR., has returned from a vacation outing passed in Denver and Colorado Springs, Colo.

WALTER S. OLSON, geological engineer for the Texas Company in Bakersfield, Calif., is motoring through Washington and Oregon on his wedding trip. His marriage to MISS ELIZABETH ANDREWS, of Long Beach, Calif., took place August 27.

RALPH STEWART has been made superintendent of the Phillips Petroleum Company's Naval Reserve gasoline plant. RAY FORD, who built the plant and for four years was in charge of it, has been transferred to a similar post at the company's plant in Denoya, Osage County, Oklahoma.

H. E. WILLIAMS, independent oil operator, Houston, Tex., is home again after several weeks in California on a summer vacation trip.

WILLIAM F. HUMPHREY, president of the Tide Water Associated Oil Company, New York, has been elected vice president of the new National Foundation for Infantile Paralysis.

A. V. BOURQUE, secretary-treasurer of the Western Petroleum Refiners Association, Tulsa, accompanied by MRS. BOURQUE, had a month of relaxation in a cottage at Evergreen, Colo.

B. M. NOWERY, vice president of the Union Producing Company, Houston, Tex., and MRS. NOWERY, have returned from a summer vacation trip to Seattle, Wash., San Francisco and other Pacific Coast points.

FRED E. WILSON, superintendent of transmission lines for the Pacific Gas & Electric Company, has returned to his office at Hollister, Calif., after spending a vacation, accompanied by his family, in the high Sierras.

FRANK A. WATTS, formerly in the sales department of the Humble Oil & Refining Company in Houston, Tex., was promoted to purchasing agent for the company. He succeeds JOHN A. ROWE, who resigned.

T. L. FONTAINE, chief clerk of the Humble Oil & Refining Company's production department in Houston, Tex., was elected state president of the Texas Junior Chamber of Commerce last Saturday at its annual convention in Port Arthur. For the past year Mr. Fontaine has been president of the Houston Junior Chamber of Commerce.

S. B. ECKERT and J. N. PEW, JR., vice presidents of the Sun Oil Company, received 30-year service emblems recently. Presentations and congratulations were extended by J. HOWARD PEW, president. W. D. MASON, manager of the Sun's Marcus Hook refinery, awarded 35-year service emblems to two men, THOMAS ROSS and MURRAY HERMAN, in the specialty oil division.

VICTOR SVIMONOFF, engineer for the General Petroleum Corporation in California, delivered an address before a citizens' group in Bakersfield last week in which he emphasized the contrast between the high wages paid in the United States oil industry and the small wages paid to Russian workers in the same industry. Mr. Svimonoff was stationed at Baku after the war, and he has had world-wide experience in the industry.

JOHN G. HUFFMAN, engineer with the Louisiana Department of Conservation, Shreveport, is spending a vacation in Amarillo, Tex. ERNEST R. LINDSEY, another member of the department's staff in Shreveport, has returned from a vacation trip to California.

R. W. RUSSELL has been made superintendent of the Falcon Refinery, Inc., at Great Bend, Kans., succeeding the late John Grubb. JAMES HEDGES, formerly at the Arkansas City, Kans., refinery of the Shell Petroleum Corporation, now closing down, has joined the force of the Falcon.

J. E. BRANTLY, president of the Drilling & Exploration Company, has returned to his Los Angeles office after a two months' trip in South America. After supervising work in the jungles of the Amazon country of Peru, where his firm is drilling a wildcat for Ganzo Azul Compania de Petrolio, Mr. Brantly was joined by his family and visited Rio de Janeiro and other South American cities.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Gulf Refining Company announces that the retail price of gasoline in its territory will not be more than 16 cents per gallon for the remainder of the year. There is no tax.

John William Waltz, 65, oil producer, dies in Oil City, Pa. He is said to have originated the plan of pumping oil wells with compressed air in about 1876.

There are 33 oil refineries in Kansas, Oklahoma and the Sugar Creek area in Missouri. They have a capacity of 79,475 barrels of crude per day. The largest is the Standard Oil Company plant at Sugar Creek, 17,000 barrels.

20 YEARS AGO

Oil is discovered in Section 9-22-4, Marion County, Kansas. Range 4 is productive in each township north and south for 45 miles.

The I.W.W. (Industrial Workers of the World) are having a sorry experience trying to "capture" the oil and coal fields of Oklahoma and Kansas. They find the workers unsympathetic and the police hard-boiled. There is a World war on, and sabotage is unpopular.

The Mid-Continent field, Kansas, Oklahoma, Texas and Louisiana, produces only 440,000 barrels of oil per day and the Gulf Coast of Texas and Louisiana 68,800 barrels daily.

10 YEARS AGO

Corporation Commission cuts allowable production of Oklahoma to 700,000 barrels per day for the remainder of the year.

A well flowing 127 barrels per hour in the Albercas field of Webb County is the largest flush producer yet found in Southwest Texas.

Cromwell Oil & Gas Company dry hole 1½ miles north of the Oklahoma State Capitol, total depth 6,868 feet, is the deepest well yet drilled in Oklahoma.

The average tank-wagon price of gasoline in 50 American cities is 16.04 cents per gallon, exclusive of tax. On the same date in 1926, it was 19.59 cents.

KARL HASSELMAN, president of the Salt Dome Oil Corporation, Houston, Tex., has returned to his desk after spending several weeks on Lake Louise in Canada.

ARTHUR HILL, field engineer for the Pacific Gas & Electric Company in Kettleman Hills, California, is spending a vacation along with his family at his former home in Texarkana, Ark.

W. K. WARREN, president of the Warren Petroleum Company, Tulsa, who went to Lake Junaluska, N. C., to bring back MRS. WARREN and their children, was stricken with bronchial influenza shortly after his arrival at the resort.

R. B. TANSEL, president of the Tansel Petroleum Company, Tulsa, got back last Saturday from a vacation at Eau Claire Lake, Wis. Accompanied by MRS. TANSEL and their two children, he made the trip by motor. The fish were biting.

C. E. BUCHNER, executive manager of the Independent Petroleum Association of America, is back in his office in Tulsa following a trip to California in which business was combined with pleasure. MRS. BUCHNER accompanied him. Incidentally, it was his first vacation in seven years.

NORVAL F. MYERS, formerly manager of Union Oil Company's Oleum refinery, has been appointed manager of refineries for the entire company and his headquarters will be in Los Angeles, Calif. J. N. HOLDEN, former superintendent of maintenance, has been made manager of the Oleum refinery. These promotions are the result of the recent death of R. E. Haylett, director of manufacturing, whose place was taken by L. G. METCALF.

PARAGRAPHS

FRED B. JACKSON, chief scout for the Phillips Petroleum Company, is back at his desk in Tulsa, following a vacation outing, part of which he and MRS. JACKSON passed in Yellowstone National Park.

J. R. REEVE, recently promoted to oil and gas supervisor for the U. S. Geological Survey in the Mid-Continent district, is now established in Tulsa, with MRS. REEVE and their two sons. Mr. Reeve formerly was deputy supervisor for the Northwest territory, and he resided in Casper, Wyo.

C. L. MOODY and I. M. WILSON, geologists with the Ohio Oil Company, Shreveport, La., and E. B. CHARLTON, superintendent of the Illinois Pipe Line Company, Haynesville, La., returned last week from Port Isabel, Tex., where they spent four days deep-sea fishing. The sport was cut short by rough water resulting from the hurricane which passed inland south of the Rio Grande River, into Mexico.

PAUL WEAVER, of the Gulf Oil Corporation, was the speaker at the meeting of the Kiwanis Club, Houston, Tex., in the Rice Hotel, last week. Mr. Weaver's subject was "Petroleum. Its Discovery, Many Uses and Benefits, and What the Petroleum Industry Means to Texas."

S. N. HAWKS and D. A. CRIPPS, members of the legal staff of the Cities Service Company, Bartlesville, Okla., have retired from service with the organization, it was announced late last week by company officials. Mr. Hawks, 77, had been with Cities Service 18 years. He is a Yale graduate and for 10 years was on the staff of the Kansas attorney general's office. He plans to remain in Bartlesville. Mr. Cripps, 58, a graduate of the University of Missouri, had been with the company 16 years. He will move to Montana.

J. E. MOORHEAD, executive secretary of the Pennsylvania Grade Crude Oil Association; W. S. ZEHRUNG, president of the Pennzoil Company, and J. H. CONTINO, treasurer of the National Transit Company, have been elected president, vice president and secretary-treasurer, respectively, of the Oil City Gridiron Club. Mr. Moorhead succeeds J. V. FRAMPTON, attorney for the Quaker State Oil Refining Corporation.

E. L. DAVIS, formerly district engineer in the Los Angeles Basin area for the Texas Company, has been made assistant chief engineer for the entire California division of the company, and has moved his headquarters from Long Beach to Los Angeles. W. E. LARSON, formerly petroleum engineer in the Long Beach district, has been made district engineer for the Los Angeles Basin area.

A. L. BERGERE, of Old Spanish Grants, Inc., Los Angeles, Calif., spent several days the past week in Albuquerque and Santa Fe, N. Mex., on business.

W. F. LOWE, secretary of the Natural Gasoline Association of America, underwent an appendectomy in Tulsa Tuesday of this week. Reports from the hospital stated that he was recovering rapidly.

W. P. Z. GERMAN, general counsel for the Skelly Oil Company, Tulsa, telegraphed from Evergreen, Colo., last Saturday that his return, with MRS. GERMAN, was delayed by flood conditions that made some roads impassable. He was expected home this week.

HERBERT HOOVER, JR., of Pasadena, Calif., with MRS. HOOVER and PROF. P. S. FOGG, of the California Institute of Technology, recently made a motor trip to Alberta, Canada, visiting the Home Oil Company operations on the Brazeau structure near Rocky Mountain House.

MRS. LEON PEPPERBERG, Dallas, Tex., has presented to the University of Texas a library of about 650 books on petroleum engineering as a memorial to her late husband, a widely known geologist. DR. H. H. POWER, professor of petroleum engineering at the university, said the collection was worth several thousand dollars. The gift will be received officially later this fall, when Mrs. Pepperberg will unveil a plaque. Mr. Pepperberg was formerly a member of the United States Geological Survey, and at the time of his death last year was a consulting petroleum engineer. He was credited with locating several oil pools in Texas, including the Nigger Creek, in Limestone County.

Water-Flood His Hobby

Water-flooding is a sort of hobby with Harry M. Ryder, and his election to the presidency of the Bradford District Pennsylvania Oil Producers Association is looked upon as assuring an aggressive handling of problems peculiar to that area. Mr. Ryder, of the Ryder-Scott Company, Bradford, Pa., has an unusually helpful background in the field of petroleum research. Graduating from Pennsylvania State College in 1911, he taught physics in that institution in 1914-15 and he received his master's degree in physical chemistry in 1916. He entered the research division of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and he remained there six years. In 1922 he went to the Union Switch & Signal Company, a Westinghouse affiliate, working two years on patent litigations.

HARRY M. RYDER

Upon leaving Union Switch & Signal, Mr. Ryder took a year out, spending it on a farm in Maryland. Returning then to active work in 1925, he joined the Petroleum Reclamation Company, of Bradford, a producing concern now known as the Petroleum Reclamation Division of Case Pomeroy, Inc. In his new post he established the first engineering and research laboratory in the world devoted to water-flood problems, and his studies led to marked advance in that method of production. In 1927 Mr. Ryder entered the oil-producing business for himself and in 1935 he organized his consulting firm.

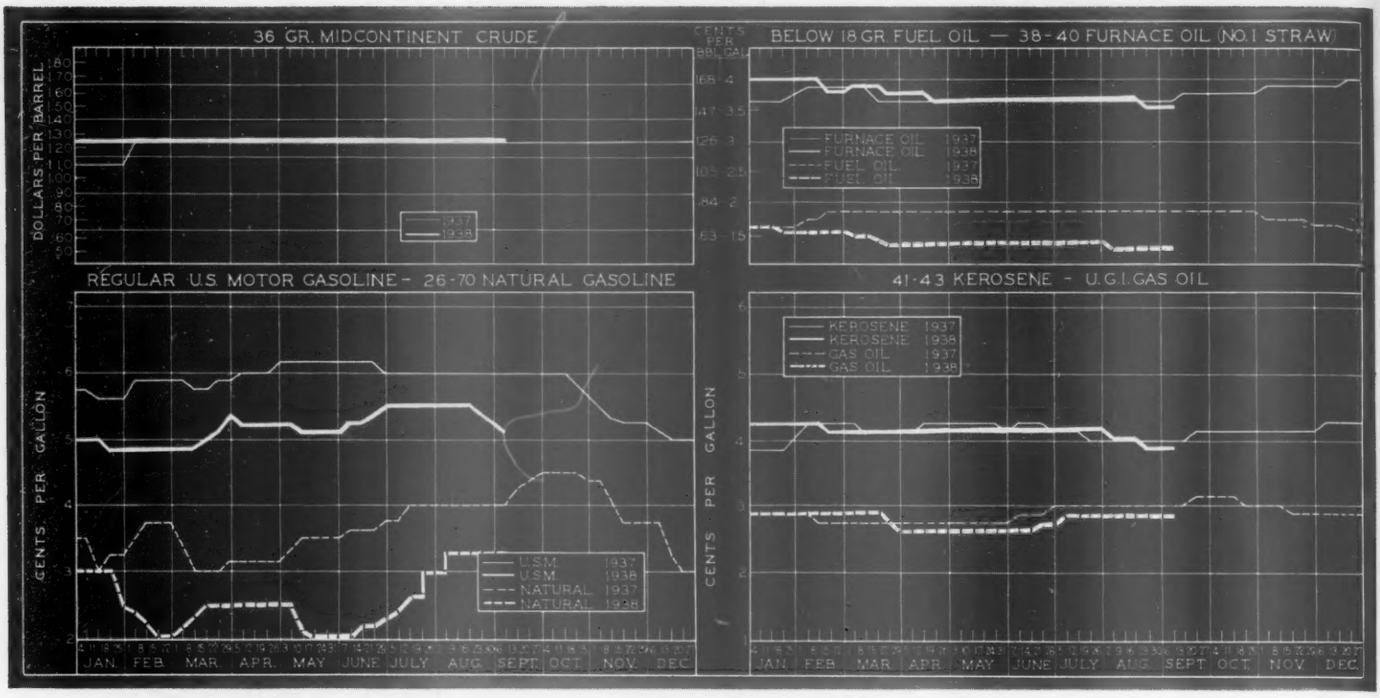
C. L. SICKS left last Thursday for Maracaibo, Venezuela, following a month's visit with relatives in Albuquerque, N. M. Mr. Sicks is stationed in Maracaibo with the Standard Oil Company of New Jersey.

H. A. SCOTT, once a farm boy in Pontotoc County, Oklahoma, is on his way to Prussia to join a refinery construction crew. He likes to travel. His first oil job was with the old Tidal Oil Company. Then he joined the Badger Oil Company in Texas. Lately he has been with an oil firm in England.

H. L. RATH, CLAUDE C. MORGAN, WILLIAM H. HEADY, N. S. LEITHEAD and J. H. McGIBNEY were elected directors of the Cane Creek Oil Company at the annual meeting of stockholders held recently at Moab, Utah, about 16 miles from the location of the company's test well on the Cane Creek structure in Grand County.

W. E. HAGGARD, formerly manager of the Continental Oil Company's land department, with headquarters in Ponca City, Okla., and recently advanced to regional manager, will have offices in Houston, Tex. The area of which he has charge includes Texas, Louisiana, southern Arkansas, Mississippi, and southeastern New Mexico.

FRED S. RAVLIN, Danish industrialist, called the "Danish Rockefeller," sailed from New York last Saturday for California aboard the Gdynia America motorliner Batory. He was accompanied by MRS. RAVLIN. This was his second trip to America this year. He is arranging with a major American oil concern for the development of newly discovered petroleum producing regions in Denmark.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline Continues Dull in Group 3 Market, With Quotations Sliding

By T. F. SMILEY

The gasoline market in Group 3 territory still had its head down this week. Following the recent cut of an eighth-cent in tankcar prices the scramble on the part of small refiners (and some not so small) to get rid of stocks was intensified. Buyers found it still easier to get concessions, and soon the whole list, with the possible exception of the 375- and 360-endpoint grades, was running at least another eighth below the former figures. Scattered sales dived to even lower levels. Low-octane material was undergoing the most savage cutting. The regular 70- to 72-octane grade was holding better than its companions, but it too was swept down in the general retreat.

Buyers Fear Falling Prices

As is usually the case in a time of falling prices, buyers have been keeping out of the market as much as possible. Jobber demand for the Labor Day triple holiday fell short of expectations, and with the last of the summer's big motoring periods now off the calendar, little hope was expressed for any marked pickup in consumption or sales.

Gasoline history has shown that while consumption inevitably undergoes a tapering off with the close of the vacation season, excellent movement may continue into late fall or early winter. The most that can be expected in point of revenue from this sustention of business, however, is maintenance of prices at or near their summer level. In 1935 the price line, except for one week, preserved an unwavering course across the chart from June until the first week of January, 1936. Then a raise in the price of crude sent the tankcar price of regular-grade gasoline a half-cent upward to 6⅛ cents. A few weeks later the price settled down at 6 cents, and it stayed right there till the middle of August. The lowest price the regular grade touched that year was 5⅛ cents, and it made a moderate recovery after the August recession. In both 1934 and 1937 the seasonal drop came in October.

The present year differs from those immediately preceding it in the fact that at no time in the past summer has there been a clear profit for the refiner in gasoline. Until its recent tumble it was at just about the break-even point. At current quotations it is said to represent actual loss. Furthermore, with some of the other products pointing downward because of a generally nervous market, many refiners declare they will be doing well if they get back what it costs them to process a barrel of crude oil.

Uncertainty over crude prices continues to be a disquieting element in the refined oil market. The action of the Rock Island Refining Co., which reduced its postings late last week, added to the uneasiness. Contraction of outlets for Oklahoma gasoline growing out of offerings from Illinois, East Texas, Louisiana, Arkansas and Michigan was said to be becoming more noticeable, especially as an increasing number of refineries in Illinois begin to distribute their output.

Listless Market for Naturals

Natural gasoline, influenced by an unsettled refinery market, was lifeless. "The most listless market for this season in years," one manufacturer called it. Demand on the part of refiners was slow. Many of them are fairly well supplied and are holding back to see what the motor fuel market is going to do. Not infrequently it has proved difficult to get shipments of light ends in September, so farseeing refiners buy and store pretty well in advance to avoid embarrassment.

Domestic burning oils were holding well, with no trouble finding outlets. The No. 3, zero cold test, continued scarce. Jobbers were buying in fair volume for fall and winter use. Notwithstanding the higher prices for Pennsylvania neutrals and bright stocks, the Mid-Continent products were still slow, though a slightly better tone was evident. Wax was strong at unchanged prices.

Refined Oil Market Barometer

Gasoline weak, with adverse influence on other divisions of refined market: Failure of stocks to drop to economic level and uncertainty over crude prices continue to be major depressants. Naturals sluggish, in sympathy with refined product. Jobber buying of light burning oils improving seasonally. Lubricants in better position in East and slightly firmer in other areas.

MID-CONTINENT. Gasoline down. Naturals inactive. Heating oils somewhat steadier.

EAST COAST. Gasoline buying cautious. Burning oils and industrial fuels improving.

GULF COAST. Fuel oils fairly tight, but prices unchanged. Gasoline and kerosene dull.

CALIFORNIA. Market quiet. Trying to stabilize both rack and retail prices.

PENNSYLVANIA. Gasoline, kerosene, and light fuel oil quiet. Lubricants stronger.

CHICAGO. Gasoline lifeless. Fall plowing likely to strengthen kerosene and tractor fuels.

Eastern Gasoline Market Slow But Burning Oils Stronger

By H. STANLEY NORMAN

NEW YORK, Sept. 6.—Motor fuel moved in eastern distribution channels at a moderately active rate last week in preparation for the last triple holiday week-end of the summer. Jobbers and dealers bought on a more conservative basis than normally, however, because of the softer crude price in East Texas and because the gasoline tankcar market is trending to lower ground.

Even the flurry of buying during the last week in August in preparation for the Labor Day weekend failed to stem the softer gasoline prices on the Gulf Coast. Tankcar motor fuel prices in the northeastern Atlantic district are unchanged in general, although occasional sales at concessions are reported. Motor fuel of 65 octane plus is freely available at New York, Boston, Philadelphia and Providence at 6½ cents per gallon in tankcars. Barge deliveries are moving at an eighth of a cent under the tankcar price. The entire motor fuel market reflects the unwillingness of jobbers and dealers to extend their purchases beyond immediate requirements. This tendency of distributors to buy on a hand-to-mouth basis is typical of the season, however, and does not necessarily reflect or characterize a weak market.

In direct contrast to the motor fuel market, all classes of burning oils, with the possible exception of kerosene, are moving in greater volume and the price structure is strengthening with each sizeable sale. Light No. 2 fuel oil is quoted at a minimum of 3½ cents on the Gulf Coast cargo market and the price of 4¼ cents per gallon to the northern Atlantic Coast tankcar trade appears firmly established. Kerosene is offered in limited quantities to the New York tankcar trade at 4¾ cents per gallon, but 5 cents appears to be the minimum prevailing at other Atlantic terminals. There has been a slight improvement in demand for kerosene during the past two weeks, particularly in the New England area and in the higher sections of upstate New York where early morning and evening temperatures require a slight amount of heating even this early in the fall season.

The increasing demand for fuel oil was reflected in the refinery stock summary for the week ended August 27 during which a slight reduction in material was reported for the first time in several months. Jobbers have been active in the market and they report domestic burner users are gradually filling their tanks. As consumers gain experience the trend toward early purchases of fuel oil requirements is distinct.

Industrial grades of fuel oil have gained considerable strength during the past three or four weeks and this improvement continued up through September 3. Bunker C fuel oil is in reasonably good condition on the Atlantic Coast and practically all factors in the New York harbor market are quoting 95 cents per barrel. Improvement in the heavier oils extends into the Gulf Coast market although limited quantities of certain grades are still available for cargoes at 62½ cents. A majority of heavy fuel on the Gulf Coast is held for higher figures. Manufacturers are ordering against heavy fuel oil contracts at an improved rate and the large building heating requirements are influencing the movement to stronger marketing ground.

The crude price adjustment in East Texas and that which followed near the end of last week in Pennsylvania did not produce the pessimism which normally attends a realignment of the market. On the contrary, most eastern oil executives feel the adjustment in East Texas was inevitable and that it actually lends strength to the rest of the crude structure. Naturally, part of the optimistic view is due to the prompt action of the Texas Railroad Commission in returning to a five-day producing week for September.

Despite the recent improvement in neutral and bright stock prices and movement in the western Pennsylvania refining district, the crude cut there is said to be a direct result of too much production. Some of the refineries in that district are planning to resume operations this month after shut-downs of four to six weeks, but the prospects are that production is still more than adequate. The demand for light fuel oil, kerosene and gasoline in the Pennsylvania refining district is reported disappointing at the moment, although quotations are generally unchanged. Bright stocks and neutral oils continued their market improvement last week with some suppliers elevating their asking prices a half to three-quarters of a cent per gallon. Bright stock of 25 pour test is generally held for 14 to 14½ cents while the 200 neutral ranges from 15 to 16 cents per gallon. The prevailing range of prices for Pennsylvania lubricating oils is approximately 2 to 3 cents higher than the lows reached during the middle of the summer.

Jobber and industrial customers are ordering more liberally against contracts. Manufacturing activity appears to be increasing throughout the east and middle west, if industrial demand for lubricating oils from the Pennsylvania market can be considered indicative. A large portion of the industrial demand is reported coming from automobile manufacturers and steel mills. This class of consumption will probably increase as the year draws to a close and as full scale production of 1939 models develops.

Pennsylvania tankcar gasoline prices have tended off in line with other production districts. Motor fuel of 65 octane, unleaded, is reported offered freely at 6½ to 6¾ cents while regular "Q" gasoline is available at a top of 7 cents per gallon. Kerosene ranges from 5⅜ to 5 cents per gallon with movement reported light at those figures.

In addition to the improved prospects for domestic consumption of heavy fuel, the strained situation in Europe probably is influencing suppliers to take a more cheerful view of admittedly heavy stocks. Feelers are in the export market for several cargoes of residual as well as light fuel oil. The feelers appear to be more in the nature of locating available stocks for prompt action in the event European conditions grow more serious. There was no new spot business reported in the export market last week, but the movement against contracts continues at a satisfactory level. There is increasing evidence that earlier predictions of a sustained export market for all of 1938 will be justified when the final total is made in January.

From now through September and part of October the movement of motor fuel, kerosene and light fuels will be particularly heavy through the northern inland waterways, including the New York barge canal, the Great Lakes and other similarly located arteries of trade. Sufficient supplies must be moved into storage in the area subject to ice blockades during the next six weeks to carry through the winter months. Such preparations for the winter are expected to cushion or delay the drift of motor fuel prices. Furthermore, restoration of the five-day producing week in Texas may retard motor fuel production

(Continued on Page 112)

A. P. I. Weekly Refinery Statistics

Figures for the week ending

September 3 not obtainable

owing to Labor Day holiday

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending August 20, 1938	285,137,000 barrels
Week ending August 13, 1938	286,251,000 barrels
Week ending August 21, 1937	309,699,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of September 6, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡10.3
Mason City	15.8	14.3	4.0	‡10.7
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	14.3	12.8	4.0	9.0
Grand Rapids	14.8	13.8	4.0	9.7
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†10.2
South Bend	17.6	16.1	5.0	†9.0
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	8.5
St. Louis*	15.2	13.7	4.0	10.1
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	10.6	4.0	7.8

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective August 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8.5 cents; 150 gallons and over, 8 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex grade B, 1-799, gallons 5 cents; 800 gallons and over, 4 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank. wag.
Atl'tic City, N. J.	13.4	11.4	4.0	8.0
Newark	13.4	11.4	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.1
Hickory	19.15	16.65	7.0	12.5
Mt. Airy	18.95	16.45	7.0	12.3
Raleigh	18.25	15.75	7.0	11.6
Salisbury	18.75	16.25	7.0	12.2
Charleston, S. C.	17.25	14.75	7.0	10.6
Columbia	18.25	15.75	7.0	11.6
Spartanburg	18.95	16.45	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank-wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	19.0	16.0	7.0	12.0
Augusta	19.5	16.5	7.0	8.0
Macon	19.5	16.5	7.0	11.5
Savannah	19.0	16.0	7.0	10.0
Birm'ham, Ala.	21.5	18.5	8.0	12.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	21.5	19.5	9.0	10.0
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	20.0	17.0	7.0	9.5
Jacks'ville, Fla.	18.0	15.0	8.0	8.0
Miami	20.5	17.5	8.0	9.0
Pensacola	21.0	18.0	9.0	10.0
Tampa	18.0	15.0	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	10.5
Louisville	19.0	16.0	6.0	10.0
Paducah	16.5	13.5	6.0	10.0

*Includes 1-cent state tax.

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallons discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Inc. tax	Kero. tank-wag.
	Dealer			
Denver, Colo.	15.5		5.0	11.5
Grand Junction	19.0		5.0	15.0
Pueblo	16.5		5.0	10.5
Casper, Wyo.	17.0		5.0	11.5
Cheyenne	13.0		5.0	13.0
Butte, Mont.	19.5		6.0	15.5
Billings	19.0		6.0	13.0
Helena	20.0		6.0	15.5
Great Falls	19.0		6.0	15.5
Salt Lake City, Utah	17.0		5.0	16.0
Twin Falls, Idaho	21.0		6.0	18.0
Boise	21.5		6.0	18.0
Albuquerque, N. M.	17.5		*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. con'r.	Divided dlr.	Inc. tax	tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	T-wag. dealer	T'car consr.	Inc. tax	tank wag.
Albany	14.8	12.8	5.0	9.0
*Met. N. Y.:				
M'htt'n, Bronx	13.4	12.5	5.0	8.75
State Island	13.4	12.5	5.0	8.75
Q'ns. & Bklyn.	13.4	12.5	5.0	8.75
Buffalo	14.5	13.4	5.0	7.5
Rochester	15.3	13.5	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.0	11.5	4.0	8.0
Portland, Me.	15.0	12.75	5.0	8.75
Manch'ter, N. H.	15.0	13.3	5.0	8.5
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax.	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank-wag.	Dlr.	Inc. tax	tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	16.5	6.0	10.0
Norfolk	18.4	16.9	6.0	11.2
North Platte	18.4	15.4	6.0	11.0
Scotts Bluff	19.5	14.4	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	19.75	17.25	*10.0	†13.5
Baton Rouge	17.75	15.25	8.0	*10.5
Alexandria	17.75	15.25	8.0	12.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	17.75	15.25	8.0	12.5
Shreveport	16.5	14.0	8.0	11.0
Knoxville, Tenn.	21.0	18.5	8.0	14.5
Memphis	19.0	16.5	8.0	12.5
Chattanooga	20.5	18.0	8.0	14.0
Nashville	20.0	17.5	8.0	13.5
Bristol	21.25	18.75	8.0	15.0

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Philadel'hia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'ld, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn.	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	12.0	5.0	7.0
Ft. Smith, Ark.	14.75	5.0	7.5
Little Rock	17.25	7.5	8.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax.	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Nebraska) August 30 advanced dealers gasoline 2 cents in Norfolk.

Standard Oil Co. of Kentucky August 12 reduced tank-wagon and dealer gasoline .5 cent and August 25 1 cent in Macon; August 26, reduced tank-wagon and dealer gasoline 2.5 cents in Jacksonville and Tampa; September 1, reduced tank-wagon and dealer gasoline .5 cent in Savannah. August 18, reduced tank-wagon kerosene 1.5 cent in Montgomery; August 18, reduced tank-wagon kerosene 1.5 cent and August 31 2 cents in Augusta.

Standard Oil Co. (Indiana) August 26 reduced tank-wagon kerosene 1.2 cent in Indianapolis.

New York Market

(Continued from Page 111)

to an extent that stock reductions will be maintained through September. Some key executives still entertain hopes that motor fuel stocks will touch the pre-winter level established in 1937.

Efforts on the part of jobbers to push motor fuel prices below their present range will meet with strong resistance in the opinion of close observers in the northeastern territory. Retail conditions throughout the northeast are probably more nearly satisfactory now than at any time since start of the year, particularly in the thickly populated center around New York and Newark.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of September 6, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04¼	.04½
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05⅛	.05⅜
60-62 400 grades:		
62 oct. and below	.04¼	.04½
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05⅛	.05⅜
64-66 375	.04⅝	.04¾
68-70 360	.04⅞	.05

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¼	.04½
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05⅛	.05⅜
60-62 400	.04¼	.04½
64-66 375	.04⅝	.04¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:	
62 octane and below	.04⅜
63-66 octane	.05⅛
67-69 octane	.05¼
70-72 octane (regular)	.05¾

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:	
62 octane and below	.05
67-69 octane	.05½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04⅝
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05⅛
70-72 octane	.05¼	.05½
60-62 400 grades:		
62 octane and below	.04⅜	.04⅝
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05⅛
70-72 octane (regular)	.05¼	.05½
64-66 375	.04⅝	.04⅞
68-70 360	.04⅞	.05⅛

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¾	.05⅜
65 octane	.06¾	.07
68-70 octane	.07	.07¼

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:	
Below 60 octane	.04¾
60-64.9	.04¾
65 octane and higher	.05⅛
68-70	.05⅜

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¾	.04⅞

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03¼
Grade 18-55	.03⅜ .03¾

NORTH TEXAS—

Grade 26-70	.03¼
Grade 18-55	.03⅜ .03¾

CALIFORNIA—

75-85 375-390	.06¼	.07

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.03½

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 l.b.p., 480 max., e.p.	.04½	.04¾

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04⅛
42-44	.04⅛	.04⅜

NORTH TEXAS—

41-43	.03⅞	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (inland refineries)—

45	.04⅞	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅜

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-42	.03⅞	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅝
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42		.03¾
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅝
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low cold test, 24-28	1.00	1.10
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.75	.82½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03¾	.04

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.40
24 plus Diesel, per bbl.	1.05	1.40
24 plus Diesel (bunkers)	1.25	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.65	.85
12-17 (tankcars)	.55	.90
10-17 (high sulfur)	.50	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus Diesel, per bbl.	1.20	1.50
San Francisco:		
24 plus Diesel, per bbl.	1.45	1.55
24 plus Diesel (bunkers)	1.50	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03½
43-47 Diesel		.03½
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunkers (bulk cargoes)	.62½	.67½
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankers)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05½

PENNSYLVANIA—

Bright stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.17	.17½
15 pour test	.16	.16½
20 pour test	.15	.15½
25 pour test	.14	.14½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 cold test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pour test	.17	.17½
10 pour test	.16	.16½
15 pour test	.15	.15½
25 pour test	.14	.14½
200 vis. at 70° F., 3 color:		
Zero pour test	.18	.18½
10 pour test	.17	.17½
15 pour test	.16	.16½
25 pour test	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:	
122-125 (a.m.p.) wax	.0420
125-127 (a.m.p.) wax	.0435
128-130 (a.m.p.) wax	.0445
130-132 (a.m.p.) wax	.0455
133-135 (a.m.p.) wax	.0500
135-137 (a.m.p.) wax	.0515
124-126 (a.m.p.) w.s.	.0185
124-126 (a.m.p.) y.s.	.0185
Petrolatum in barrels, carload lots:	
Dark green	.02 .02¼
Amber	.02¾ .02½
Extra amber	.02⅞ .02¾
Lily white	.05½ .05¾
Snow white	.06¼ .06¾
Cream	.04½ .04¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.04¾
60-62 400		.04¾
61-63 390	.05⅛	.05¼
64-66 375		.05½

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (Aug. 29, 30 and Sept. 1, 1938)*	$1.25
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*Price posted by all companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light (July 8, 1938)*†	1.05
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light (July 8, 1938)*†	1.05
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Centralia, Ill. (Aug. 8, 1938)‡	1.10 to 1.25
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Aug. 9, 1938)†	.90
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Freeman-Redding (Mich.)	1.09½
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (July 1, 1938)	1.32
Kentucky River (July 1, 1938)	1.40
Western Kentucky (June 22, 1938)	1.30

*Posted by Pure Oil Co. †McClanahan P. L. and Simrall. ‡Posted by Owensboro Oil Corp. (Standard of Ohio).

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective Sept. 1, 1938)

Bradford, Pa.	$1.68
Allegany, N. Y.	1.68

SOUTH PENN OIL CO.
(Effective Sept. 1, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.68
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.34
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.28
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.18
Corning Grade Oil in Buckeye Pipe Line Co. line (Sept. 3, 1938)	1.07

PENNZOIL CO.
(Effective Sept. 1, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A — Includes Cochran, Franklin, Hamilton and Doolittle district.	$1.61
Group B — Includes Tidioute district.	1.60
Group C — Includes Turkey and Tidioute districts.	1.59
Group D — Includes Bear Creek and Porkey districts.	1.58
Group E — Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	1.56

PURE OIL CO.
(Effective Sept. 1, 1938)

Cabin Creek, W. Va.	$1.28
Bradford Hollow, W. Va.	1.28
Kelly Creek, W. Va.	1.28

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17
TURNER VALLEY NAPHTHAS AND CRUDE OIL (January 5, 1938, by Imperial Oil, Ltd.)	
Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Crude Oil Price Changes

South Penn Oil Co. and other purchasers of Pennsylvania Grade crude oil reduced prices 12 cents per barrel on September 1. South Penn Oil Co. reduced Corning, Ohio, crude 10 cents per barrel September 3.

Rock Island Refining Co. effective September 1 posted a new and reduced-price scale for crude it purchases in southern Oklahoma fields. Beginning with 20-gravity oil at 65 cents, it pays 69 cents for 21-21.9 gravity, and adds 4 cents per barrel for each degree upward to and including 25 degrees at 85 cents; then 3 cents per barrel for each degree upward and including 30-30.9 degrees at $1; then 2 cents per barrel for each degree upward to and including 40 degrees and over at $1.20.

The new price is a 35-cent cut on 20-gravity oil; 15-cent cut on 25 gravity, and a 10-cent cut on 40-gravity crude. The Rock Island refinery is at Beckett, Stephens County, Oklahoma. The company ran about 4,390 bbls. per day in July.

Crude Prices by Gravities

	1 Oklahoma-Kansas	2 Oklahoma-Kansas	3 North and Central Texas	4 East Central Texas (Mexia district)	5 North Louisiana-Arkansas	6 Gray County, Texas	7 Hutchinson-Carson counties, Texas	8 Rodessa, Louisiana-Texas and Panola County, Texas	9 Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	10 Gulf Coast	11 Gulf Coast	12 Lea County, N. Mex West Texas except Pecos County	13 Mirando district, Texas	14 Marion County, Texas	15 Refugio, Greta, Saxet, Taft, Texas	16 Anahuac, Flour Bluff, Dickson, Turtle Bay	17 White Castle, Louisiana	18 Iowa, Louisiana	19 Cayuga, Texas
Sel. 18	....	....	....	....	....	....	....	....	....	$ .95	....	....	....	....	....	....	....	$ .90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	$ .94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$ .95	....	$ .96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.99	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Sel. 25	....	$ .88	....	....	$ .90	....	....	$ .93	....	....	....	....	....	$ .90	....	....	....	....	$ .88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$ .78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Sel. 29	$1.06	....	$ .96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Sel. 35	....	....	....	....	....	$ .96	$ .91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Effective July 8, 1938, Standard Oil Co. of Louisiana posted prices in Buckner, Magnolia, and Village pools in Columbia County, Arkansas, as follows: Below 25 degrees 83 cents; 25-25.9 degrees 85 cents; with 2 cents added for each degree upward to and including 40 degrees and above at $1.15.

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.

Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

Column 3—All purchasers.

Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.

Columns 5, 6, 7 and 8—All companies. Effective July 8, by Standard Oil Co. of Louisiana, Buckner, Magnolia and Village, Arkansas, 7 cents per barrel less than prices in Column 5.

Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)

Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)

Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co. Column 12—All purchasers. Column 13—All purchasers (effective July 6, 1937). Column 14—Magnolia Petroleum Co. Column 15—Humble Oil & Refining Co. (effective July 6, 1937). Column 16—Humble Oil & Refining Co. Columns 17 and 18—Shell Petroleum Corp. Column 19—Tide Water Oil Co.

Texas Wildcats

(Continued from Page 105)

Pet. Producers No. 1 McDuff, sec. 32, Blk. 15, T.&P. Sur. W.O.C.; S.O.&G. 1,877-81 ft.

Providence Royalty Co. No. 1 Phillips Est., Subd. 43, Lge. 334, Harrison C. S.L. Sur. Loc.

S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. S L, 2,428 fr. E L, J. E. Cockrell Subdiv. 2, G. Martinez Sur. 195. Loc.

Sinclair Prairie No. 1 Williams, sec. 40, Blk. 18, T.&P. Sur. Drlg. 1,400 ft.

Stiles et al No. 1 Cook, Sec. 89, B.B.B. &C. Sur., western part of county. Spdg.

Nolan County

Oyster, Harkrider et al No. 1 J. H. Withers. C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Drlg. 4,325 ft.

Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test, 6 mi. SW of Sweetwater. Loc.

Palo Pinto County

Goble-More Drlg. Co. No. 1 M. B. Costello, R. R. Williams Sur., Abst. 896. U.R. 8¼-in. 1,500 ft.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T. &P. Sur., Abst 1958. S.D. 2,175 ft.

Glen Rose No. 1 H. D. Groves, SW¼ Sec. 350, T.&P. Sur. Drlg. 600 ft.

Hollenback No. 1 McNay, T.&P. Sur. No. 203, Abst. 1366; 3,500-ft. test. M. I.R. 960 ft.

Richard Bradshaw No. 1 Horace Wilson, T.E.L. Sur. No. 2444, Abst. 1308. SD., T.D. 560 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test. S.D.O. 3,171 ft.

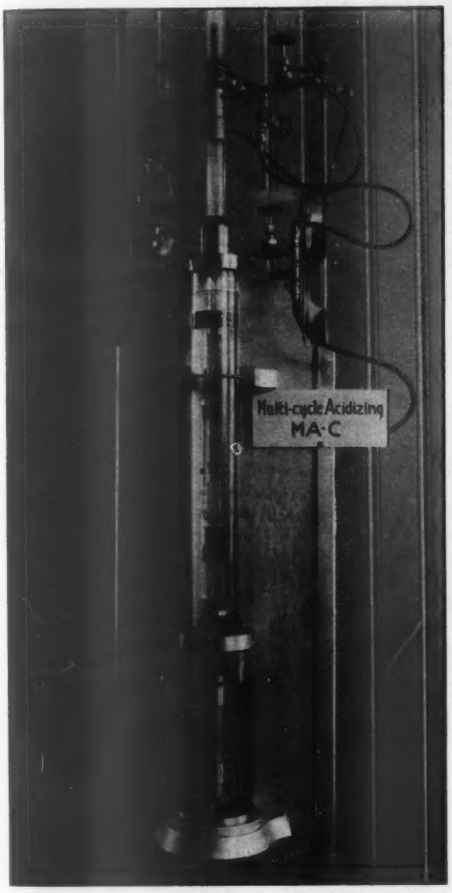
Fox & Rudd No. 1 Shotwell, Sec. 59, B. A.L. Sur. Prep. U.R.; T.D. 1,594 ft.

R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, sec. 38, L.A.L. Sur., 4,500-ft. test. Drlg. 2,800 ft.

New or Improved Equipment

Halliburton Is Planning to Have More Demonstration Devices

More demonstration devices for showing the operation of Halliburton Oil Well Cementing Co. processes are to be seen in California oil fields,



according to announcement of C. P. Parsons, vice president. These models, made of transparent Lucite, have elicited favorable comment where they have been shown. Mr. Parsons says in his announcement:

"During the recent International Petroleum Exposition at Tulsa, Okla., in which the oil industry saw the latest developments in all types of oil-field equipment, we were very pleased with the results of several demonstration devices which we made of transparent Lucite instead of the metal which had been used in previous years. One look at the illustration herewith is convincing. This material not only machined exceptionally well, so that we could turn threads, etc., but the assembled devices retained perfect transparency by which all the inner parts of the devices were plainly visible through the water used in the demonstration and the outer portions of the devices.

"Not only did we show the movement of fluids, represented by water, through the various parts of the devices; we also imposed a pressure of 10 pounds per square inch during the demonstrations and at one time imposed 150 pounds per square inch without any damage.

"Our engineer who made these models is so enthusiastic about the results that he has had us continuously on the spot with requests that he be allowed to make demonstration models of all our devices for showing same to the trade in our routine calls. He would even go so far as to have us all wearing Lucite pants and Lucite girdles. In short, he has become Lucifer, the 'Lucite' Lune—but we like it!

"We have just authorized him to make several more demonstration devices to be used in the oil fields of California."

Here and There With Men Who Manufacture Equipment

William H. Riggins, formerly with Emsco Derrick & Equipment Co. in Midland, Tex., has entered the employ of Hydril Co., with headquarters in Torrance, Calif.

Stafford Park, formerly division manager for Eastman Oil Well Survey Co. in Oklahoma City, Okla., has been transferred to Long Beach, Calif., where he holds a similar position. His former post is occupied by M. E. (Hank) Shrader.

J. R. Funk, service engineer in Oklahoma and Texas for the Landis Machine Co., Waynesboro, Pa., left Miami, Fla., September 3 by Pan American Airways for a trip through South America. Mr. Funk will service Landis die-heads and thread-cutting machines in the oil fields, as well as in industrial shops throughout South America. His work in Oklahoma and Texas has been taken over by William B. Baker.

Davis Heads Johnston & Jennings Co.

Robert J. Davis has been elected president of the Johnston & Jennings Co. to succeed Tracy J. Calhoun, elected chairman of the board. Mr. Davis, a director of the company for the past two and one-half years, is a grandson of the late Robert Johnston, of Cleveland, one of the founders in 1884. Hart H. Fleming continues as vice president. The Oil Conservation Engineering Co., manufacturer of Oceco tank fittings and oil industry specialties, was merged with the Johnston & Jennings Co. some years ago, and is now operated as the Oceco division.

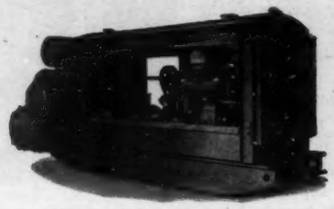
Whetstine Joins Allied Steel

Harry R. Whetstine, who has joined Allied Steel Products Corp., Tulsa, as sales engineer, majored in metallurgy and chemistry at the University of Southern California and received his degree from that institution. He is a member of the Phi Delta Chi fraternity.

Mr. Whetstine has been in the Mid-Continent area 18 years and is well known as a welding engineer and sales engineer among the oil men. He formerly was affiliated with J. D. Adams Co., Indianapolis, Ind., which has made Allied Steel Products Corp. its Mid-Continent distributor for electric welding equipment and rods, together with the Purox line of acetylene welding equipment and rods. His headquarters are in the Tulsa office.

Heavy-Duty Compressor Suited for Service in Oil Fields

A compressor delivering 425 cubic feet of air per minute (actual) at 100 pounds has been announced by Ingersoll-Rand. Known as the Model



425, it is a self-contained compressor plant, available in portable or semiportable mountings. Employing the same slow-speed, heavy-duty, stationary-type compressor usually purchased for a permanent installation, it is said to be unusual in the economy of its operation and the durability of its construction.

A four-cylinder, heavy-duty tractor-type engine drives the compressor through simple reduction gears. Either gasoline, gas, or oil engines can be furnished. The unit is compact and light and is described as especially suited for contracting and oil-field service. A descriptive bulletin may be obtained from Ingersoll-Rand, 11 Broadway, New York.

McCartney Joins Clark Bros.

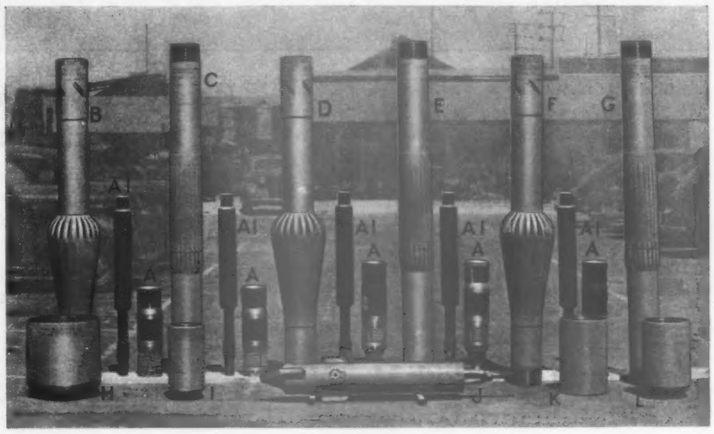
Robert R. McCartney is now handling export and eastern coastal sales and engineering matters for Clark Bros. Co., manufacturer of engines and compressors, it is announced by J. B. O'Connor, vice president. Before joining Clark Bros. last April Mr. McCartney had been associated for years with Gulf Oil Corp. in its New York office. For 10 years before that he was in the pump and engine division of Worthington Pump & Machinery Corp., after graduating from the Pratt Institute of Mechanical Engineering in 1924. Mr. McCartney's headquarters are in the New York office of Clark Bros.

Crane Offers New Line of Unions

A new line of forged-steel air-pump unions (No. 253½-H) constructed for high-pressure lines subject to piping strains and vibration, expansion and contraction, is announced by Crane Co., Chicago. These unions are recommended for 600 pounds steam working pressure at 550° F. and for 2,000 pounds cold water, oil or gas, nonshock. These unions, which supplement the line already listed in the Crane No. 52 Catalog, are made in reducing sizes and have male and female ends, the male ends being larger than the female. The brass to steel ground-joint seat is noncorrosive and holds pressure without a gasket, according to the manufacturer. The unions, it is said, can be taken apart and reassembled repeatedly without affecting strength or tightness.

WILMINGTON FIELD CALLS FOR MANY CEMENTING JOBS

In the Long Beach harbor district of the Wilmington field in California wells have been drilled through three producing zones which required cementing between the three strata. In addition to the two cement jobs necessary a third often is required within the limits of the middle producing zone itself. The cement not only protects the zones from water, but also provides a means of separating the oil production, since that from the top formation (the Ranger) is always kept separate from the oil from the two Terminal zones below. Moreover, the production from the upper Terminal and the lower Terminal is sometimes segregated. The Baker equipment used for cementing operations in completing a typical well with the liner cemented in three stages is shown in the accompanying picture.



A—Baker cement-retainers; A-1—circulation joints for use with Baker cement-retainers; B—Baker 7-foot whirler baffle collar, solid, with metal "petal" basket; C, E, G—Baker perforated cement hookup nipple with inverted metal "petal" basket; D, F—Baker whirler cementing collar, less internal mechanism, with metal "petal" basket; H—Baker regular cement guide-shoe; I—Baker regular cement bullplug shoe; J—Baker rotary wall-scraper; K—Baker regular cement float collar; L—Baker regular cement guide-shoe.

The 18⅝-inch cement-guide casing-shoe was used on the surface string. The water string, set just above the Ranger sand at 2,593 feet, was equipped with the 11¾-inch cement-guide casing-shoe, but the casing was floated in by means of the cement float collar, which was made up in the string above the shoe. The wall-scraper was used to scrape the hole below the water string.

The 8⅝-inch liner which was hung in the 11¾-inch casing at 2,540 feet was equipped with an 8⅝-inch cement bullplug casing-shoe at 4,252 feet, and above this was a section of perforated liner through which oil from the lower Terminal was taken. A blank section of pipe was located between the upper and lower Terminal zones, and this was cemented by means of a No. 5-A cement-retainer. In making up the liner a 7-foot whirler baffle collar (solid with metal "petal" basket) was placed at the bottom of the blank section of pipe and a perforated hookup nipple with inverted metal "petal" basket at the top. The cement-retainer was set just above the ports of the whirler baffle collar and cement pumped through the retainer, out the ports and up around the blank section of pipe.

Another blank section of liner was located within the upper Terminal, to cement off a portion of this formation. At the bottom of this section was a whirler cementing collar less internal mechanism with metal "petal" basket and at the top a perforated hookup nipple with inverted metal "petal" basket.

A cement-retainer was set as a casing bridge plug just below the ports of the whirler cementing collar and a cement-retainer then set just above these ports to cement the blank section of pipe.

A third blank section of liner located between the upper Terminal and the Ranger zones was cemented with the same kind of equipment and the same procedure as the one immediately below. The complete cementing of the liner in three stages therefore required the use of five cement-retainers and the other equipment as shown in the illustration. In completing the well for production a string of tubing was packed off at the top of the lowest blank section of liner, and oil from the lower Terminal was produced through this tubing. A flow string had been packed off at the bottom of the top blank section of liner and production from the entire upper Terminal was brought in between the flow string and the tubing. Production from the Ranger was taken from between the liner and the flow string. The initial production from the two Terminal zones was approximately 3,500 bbls. per day and that from the Ranger 1,200 bbls.

Lane-Wells Co. Promotions

Fred Shumack, formerly California sales manager for Lane-Wells Co. and more recently actively

FRED SHUMACK *JAMES McPHEE*

identified with the organization of the electrolog division, has been named general manager of purchases. Mr. Shumack will have control of purchases, credits, and collections in all areas in which the company operates. His headquarters will be in Los Angeles. James McPhee has been named California sales manager and under his jurisdiction will come the sale and operation of Lane-Wells products and services, including gun-perforating, oil-well surveying, directional drilling and electrical open-hole logging.

Bulletins, Booklets and Other Literature for the Trade

"Badger, Specialists in Processing," is the title of an eight-page bulletin prepared by E. B. Badger & Sons Co., 75 Pitts Street, Boston, Mass. It discusses the engineering, design and construction of complete plants or units for petroleum refining and other processes.

Type PVG multicylinder V-type gas engines are discussed in an attractively illustrated booklet ready for distribution by Ingersoll-Rand, 11 Broadway, New York.

A wheelbarrow catalog is announced by the Fairbanks Co., 399 Lafayette Street, New York. It is No. 54.

The Sullivan Machinery Co., Michigan City, Ind., has prepared a two-color bulletin descriptive of its Series P compressed air and gas aftercoolers, available in six sizes for capacities from 125 to 755 c.m.f.

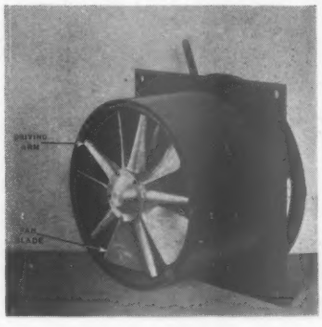
Hercules Tool Co., Box 286, Tulsa, has issued a four-page bulletin describing the new Hercules duplex polish-rod stuffing-box. In addition to engineering data and prices, the bulletin contains a field performance record showing the period of service obtained from the special packing used in the stuffing-box.

Oil Well Supply Co. has the following bulletins ready for distribution: 150-A, "Oilwell" drill-collars; 112-B, No. 50 geared power; 183, stuffing-box casingheads; 191, cementing pump; 192, No. 100 crownblock; 193, 60-inch traveling-block.

Air and Gas Mixed on Different Principle by Fanmix Burner

Coppus Engineering Corp., Worcester, Mass., manufacturer of steam turbines, blowers, and air-filters, is introducing a new line of gas burners, representing what is described as a revolutionary change in gas-burner design. The Coppus-Dennis Fanmix burner uses a different principle of mixing gas and air.

It is a rotary gas burner, consisting primarily of a fan, with a long hub, in which two ball

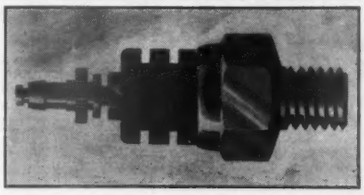


bearings are mounted, so that the fan rotates on a stationary shaft. The shaft serves at the same time as a gas-inlet pipe. The gas, admitted through the hollow shaft, enters the fan hub. The fan has several air-blades as well as driving-arms. The gas flows into these arms, leaves them through small orifices and, by reaction, causes the fan to rotate at high speed. The fan-blades then act as any other power-driven fan, delivering air for combustion. As the air flows in a direction parallel to the shaft and the gas flow is in a plane practically at right angles to the air flow, a thorough mixture of gas and air is obtainable directly at the fan.

The number of orifices in the driving-arms, as well as the gas pressure, determines the total amount of gas flow, and its reaction force determines the speed of the fan and hence the air delivery. The fan therefore can be designed so that there will be a perfect ratio between air and gas. If a lower rating is desired, the gas pressure is reduced, decreasing the total amount of gas flow and also causing the fan to slow down, reducing the air volume. Thus, at the lower ratings, again a practically perfect ratio between air volume and gas volume is obtained. Any final adjustments of the air volume can be made with the inlet shutter.

Circuit Closes if Temperature Reaches Predetermined Point

The Thermo-Safety device developed by Bart Products Co., Bartlesville, Okla., is for closing an electrical circuit upon rise of temperature to a pre-



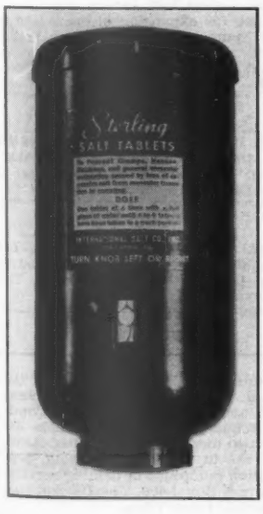
determined degree. It is screwed into a hole drilled and tapped into the bearing, water-jacket, or machine part to be protected. The device contains two electrical contacts normally held apart a sufficient distance to prevent sparking across of the electrical circuit in which it is used.

An example of the use of the Thermo-Safety device is protection of engine bearings against overheating. The device is installed in the bearing-cap as near the journal working surface as possible. An insulated wire from the sparkplug or magneto is attached to the terminal of the device. When the bearing becomes hot the device shorts out the spark and stops the engine. If a Thermo-Safety device is selected which has the proper temperature rating, the engine will stop before damage is done to the bearing. When the engine has been placed in condition for service again a new device can be installed and the engine run in the usual manner.

The device is vapor- and moisture-proof. It is made in standard temperature ratings for each type of application. Special ratings and designs can be furnished for special applications.

Salt Tablets and Dispenser for Men Working on "Hot Jobs"

Medical authorities say that anyone who works on a "hot job," anyone who exercises violently in hot weather or sweats profusely, should take salt tablets to replace salt lost by the human system in perspiration and so prevent "heat sickness." International Salt Co., Inc., Scranton, Pa., which has furnished such tablets, has developed an attractive and convenient moulded plastic dispenser for distributing tablets at drinking water locations where workers would use them.



Consumption of the salt tablets helps men on hot jobs to keep the amount of salt in the blood at the proper proportion all the time. Science has discovered that it is not possible to keep up the salt balance in the normal body with salt added to the food alone when exercise is violent or work hard. Experience is said to show that workmen in "hot jobs" who take a 10-grain Sterling salt tablet with every drink of water do not get heat cramps from "heat sickness."

The dispenser slips easily into place in a bracket. The top unscrews for filling and screws tightly shut to protect tablets from contamination. A label on the dispenser gives directions. The tablets themselves come in a convenient carton containing approximately 1,000 tablets.

Republic Alloy Steels

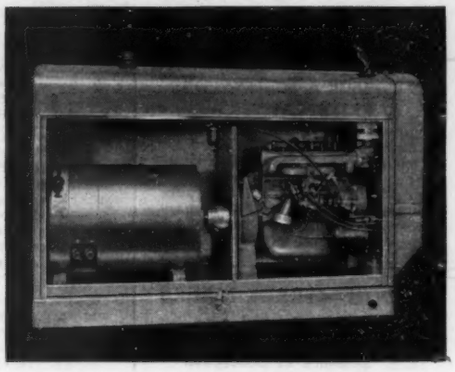
Republic Steel Corp., Cleveland, Ohio, has announced its newest alloy handbook, which replaces the 1935 edition of "Agathon Alloy Steels." Included for the first time are features which will prove valuable to metallurgists, students and engineers generally. It has been necessary to enlarge the book to emphasize adequately the trends in specification, manufacture and application of alloy steels, but the compilers have succeeded in keeping this handbook free from unrelated tabular material sometimes found in engineering handbooks. "Republic Alloy Steels," a book of 256 pages, with flexible covers, will be found unusually complete and genuinely useful.

Acquires LeRoi Sales Rights

Southern Engine & Pump Co., Houston, Tex., has acquired from LeRoi Co., Milwaukee, Wis., exclusive distribution rights for the LeRoi line of engines for the oil industry in Texas and Louisiana. Linn K. Park, widely known in the engine business, has joined Southern Engine & Pump Co. and will devote his full time to sales of LeRoi engines. Southern Engine & Pump Co., an old established firm, will carry a complete stock of LeRoi engines and parts in Houston and Kilgore, Tex., and will maintain sales offices in Dallas and Brownsville in addition to those in Houston and Kilgore. The line to be carried ranges in size from 2-cylinder, 4-horsepower to 12-cylinder, 400-horsepower, covering most oil-field requirements.

Wider Working Range Offered by Harnischfeger Welder

The Harnischfeger Corp., Milwaukee, Wis., manufacturer of P&H-Hansen electric arc welders and Smootharc welding electrodes, announces the



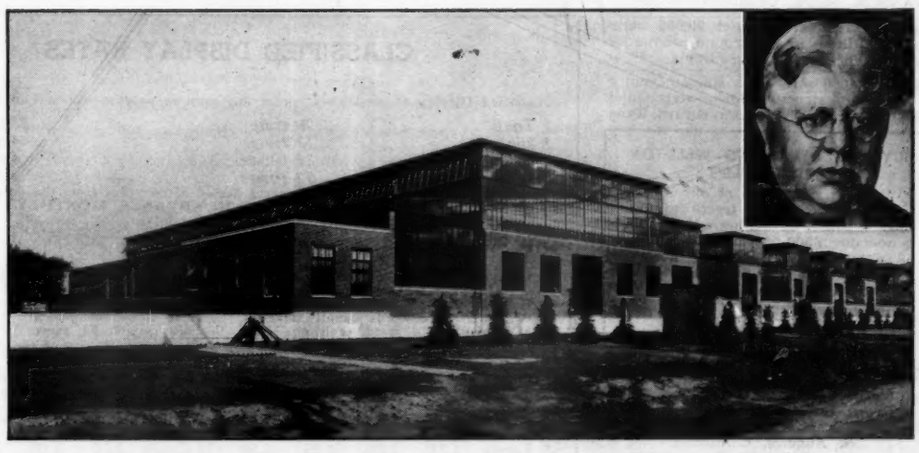
P&H-Hansen 200-ampere "Special" engine-driven welder. It is built to meet the need for an engine-driven welder with a somewhat wider operating range than the average 150-ampere unit.

Consisting of a 200-ampere, commercial-rated 30-volt 6-kw. generator with an intermittent welding range of 35 to a maximum of 225 amperes, the "Special's" generator is connected by a flexible coupling to a 24-horsepower, 4-cylinder, water-cooled engine equipped for hand-starting and with magneto ignition system. Its full tank capacity is 13 gallons, crankcase holds 3½ quarts of oil, and the cooling system contains 3¾ gallons of water. The entire unit is mounted on a formed steel base and equipped with a fully enclosing sheet metal canopy having removable sides for easy access to all parts. Although in its standard form the "Special" is a stationary type machine, it can be supplied with the standard P&H two-wheel pneumatic-tire running gear as now used on the P&H 150-ampere portable, engine-driven welder.

ALL PRECISION MACHINES IN NEW J&L WIRE ROPE PLANT

In its program of expansion the Jones & Laughlin Steel Corp. has entered the wire rope market, with a new modern plant and with every machine a precision machine of the newest type. This new plant will be known as the Gilmore gram carried on by J&L under the direction of H. E. Lewis, its president, who says:

"The entrance of J&L into the manufacture of wire rope enlarges considerably our opportunity for satisfactory return on raw materials



Wire Rope Division of the Jones & Laughlin Steel Corp. Robert Gilmore, general manager of this division, together with his engineers, recognized the need for entirely new precision machines to meet present-day demands. Mr. Gilmore has devoted his entire business life to the development and manufacture of wire rope. The plant is part of an extensive expansion and development pro- and for better operations of our rod and wire mills. The plant, at Muncy, Pa., is new in all respects and incorporates features for the manufacture of products having superior qualities that will assure our immediate participation in all major markets for wire rope. In Robert Gilmore, general manager, we have an outstanding leader in the wire rope industry to head this division."

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER
Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS
All cases submitted given personal attention.
Form **"Evidence of Conception"** with instructions for use and **"Schedule of Government and Attorneys' Fees—FREE**
LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg. Washington, D. C.

PATENTS obtained — inventions developed — working drawings — engineering advice. Mid-Continent Engineering Company, E. H. Waldrop, Shawnee, Okla

Leases and Drilling Blocks

SECURITY ABSTRACT COMPANY
El Dorado, Union County, Arkansas. Magnolia, Columbia County, Arkansas. Fee, Lease and Mineral ownership on short notice. Ownership maps.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark

DEALERS and SALESMEN
Don't wait! Write today for our lease offer. Others like yourself are making money selling these leases —you can do the same. Complete selling story, and elaborate maps furnished free. Write quick for details.
RUBUSH and COMPANY
1307 Pacific Ave., Dallas, Texas

WHY PAY big prices for Oil Leases when potential land in fee, all royalty, can be bought for $5. Investigate. J. N. SWANSON, Sayre, Oklahoma.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

ABOUT 4000 acre block Massac County, So. Illinois, on structure, low rentals. Quick sale $1 per acre. J. N. Lawler, Girard, Kans.

BUY UNDER DRILLING WELL ON SABINE UPLIFT
Will sell small part of our leases in 10, 20, and 40 acre tracts to help meet expenses of drilling well which is now down 500 feet, on south flank of Sabine Uplift, Louisiana.
Also have limited number of producing royalties in Duval County, Texas.
JOSEPH E. POPKINS
Natl. Press Bldg., Washington, D. C.

NEW MEX. LEASES; Lea, Eddy, Chaves, Roosevelt, other SE Counties. 40,000 ac. blks. or spreads. Legitimate inquiries invited. GEO. M. COWELL Co., 412 W. 6th St., Los Angeles, California.

FOR SALE—Blocks of 100 to 10,000 acres 5 to 10 year term oil and gas leases located on structures near oil and gas producing wells. Two structures are geologically approved. Depth of drilling 450 to 800 feet. W. P. Harley, Bowling Green, Kentucky.

BROKERS—ATTENTION—TEXAS
Hudspeth Co. 400 ac. fee, all or part, $5 per ac. Level, fine geol. Near drlg., major blks. Cowell Co. 412 W. 6 St., Los Angeles.

Leases and Drilling Blocks

N. MEX. weekly Oil Scout Report up to minute locations and developments. Send $1.00 for 2 months' service. Ray G. Barton, Hobbs, New Mexico.

TRADERS, owners and investors in production, royalties, leases and lands in the Texas Panhandle, Okla., and New Mex. Am quitting the brokerage business after 30 years here and offering my services to the public. A report and opinion on any deal or value offhand one dollar. Inspections and reports higher. E. B. Reeves, Alanreed, Texas.

OWNERS of bargains in production, royalties, leases and lands. I have quit the brokerage business, but have friends and clients who will buy your bargains. E. B. Reeves, Box 13, Alanreed, Gray County, Texas.

100 A. S.W.¼, 8-3N-5W Grady Co., Okla. 10 A. leased producing well. Nine new wells joining, drilling two sides 1600-2800 ft. Ellen Woods, 337 S. Victor, Tulsa. Ph. 2-4770.

BREWSTER COUNTY—TEXAS
Offer small tracts of land in fee all minerals included CHEAP. Write A. C. Smith, P. O. 200, San Antonio, Texas.

TO lease for oil and gas 25-12-3 and 26-12-3, Lincoln County, Okla. W. N. Lindsey, 1346 N. Beard St., Shawnee, Okla.

CENTRALIA ILLINOIS PRODUCTION
Dissolving partnership. Will sacrifice several wells at extremely low price. Producing approx. 50,000 bbls. month. All new equip. Quick payout. Address Box J-545, The Oil and Gas Journal, Tulsa, Okla.

SEVERAL surface mapped oil structures, edge Permian Basin. You check and deed me land, small mineral rights. Address Box J-540, The Oil and Gas Journal, Tulsa, Oklahoma.

ILLINOIS BLOCKS of acreage available, for ninety day drilling commitments, in shallow sand, and deeper lime areas in Bond, Fayette, Clay and Wayne Counties.
BOX 57, FLORA, ILLINOIS.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2. pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years' experience. This physico method may solve all your structural difficulties. Geo Miller, 1548 Post Avenue, Torrance, California. Phone 983.

Ranches and Farm Lands

8300 ACRE head of Buchanon Lake on Colorado. Well imp. ranch, fine fishing and hunting, $8.50 per acre. L. L. Morrison, Box 91, Dublin, Texas.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Situations Wanted

ACCOUNTANT-ENGINEER, young, desires position with progressive concern. CERTIFIED PUBLIC ACCOUNTANT. University graduate. Specialist in oil accounting and tax matters. Unusual experience in effecting savings in tax and record costs. Tactful and conservative. Present position limited in opportunity. Details exchanged in confidence. Address Box J-525, The Oil and Gas Journal, Tulsa, Oklahoma.

CIVIL Engineer, wants foreign work as junior engineer. Four years of varied experience as instrumentman and draftsman. Age 26. Excellent health. Single. Address Box J-541, The Oil and Gas Journal, Tulsa, Oklahoma.

ATTORNEY-ACCOUNTANT, age 31 yrs., oil company experience. Now employed, desires change. Address Box J-526, The Oil and Gas Journal, Tulsa, Oklahoma.

NOW AVAILABLE. Executive and Accountant. 18 years experience with independent producing companies. Thorough knowledge accounting, financing, stock registration, federal and state taxes and business law. Desire connection with company needing services in line with these qualifications. Address Box J-532, The Oil and Gas Journal, Tulsa, Oklahoma.

YOUNG Geologist desires position with oil or gas company. Experienced in surface and subsurface work. Foreign work considered. Address Box J-554, The Oil and Gas Journal, Tulsa, Oklahoma.

POSITION WANTED—By experienced Oil and Gas Accountant and Office Mgr., Bonded. Individual operation or Incorporation. Twenty years with last employer, business closed. Address Box J-551, The Oil and Gas Journal, Tulsa, Oklahoma.

GRADUATE Engineer. 15 years' experience, oil and production and distribution natural gas, repressuring oil sands. 3 yrs. with state service commission regulating gas companies. Employed, desire change, prefer producing oil. Address Box J-553, The Oil and Gas Journal, Tulsa, Okla.

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Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

Help Wanted

MANUFACTURER of well known line pipe fittings is seeking services of Texas-Gulf Coast representative having a knowledge of refinery piping practices as well as a following in this field in both engineering and purchasing departments. This position would necessitate traveling the States of Louisiana and Texas with headquarters at Houston. Write briefly your qualifications and state remuneration desired. Address Box J-533, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—Mechanical Engineer familiar with oil field pumping equip. to take charge of mfg. and designing equip. State exp., age, and references. Replies strictly confidential. Address Box J-543, The Oil and Gas Journal, Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

For Sale—Maps

1938 REVISED EDITION
MAP of State of Texas, Eastern N. M., parts of Southern Okla., SW Ark. and La., shows Oil and Gas Fields in color, Counties, County Seats, elevations, coordinated alphabetical index of counties and fields.
Price $1.00 postpaid

Write for descriptive folder of Oilfield and County Ownership Maps.

ZINGERY OIL MAP COMPANY
Fair Building **Fort Worth**

Financing

CAPITAL SEEKERS—Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

INQUIRIES SOLICITED FROM CORPORATIONS INTERESTED IN RAISING CAPITAL THROUGH THE MARKETING OF CORPORATE SECURITIES.
BROWN HARTWELL COMPANY
110 EAST 42 ST., NEW YORK

CAPITAL CONTACTS arranged for new and old established enterprises, seeking assistance for expansion or increased production purposes. New corporations organized, assisted and placed under way. Personal Service Bur., Box 113, Wilmette, Illinois.

Legal Blanks

Since 1908 Burkhart's legal forms have served the Oil Industry—Free catalog & samples. Burkhart Printing & Sta. Co., 115 So. Cincinnati, Tulsa, Oklahoma.

Mailing Lists

ROYALTY Lists. Unit Owners Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Manufacturer

Established Manufacturer of Oil Field Equipment with large plant and ten (10) stores in Mid-Continent and California Oil Fields desires to manufacture patented items for use in pipe line pumping, production pumping, or drilling service. Address Box J-403, The Oil and Gas Journal, Tulsa, Okla.

Equipment Wanted

WANTED — Good used casing-pulling equipment complete—must be in perfect condition—give complete description of equipment, price wanted, and location where it may be seen. Address Box J-550, The Oil and Gas Journal, Tulsa, Okla.

WANTED—6 x 12 power mud pump and engine, must be good condition, any standard make. Address Box J-552, The Oil and Gas Journal, Tulsa, Oklahoma.

The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

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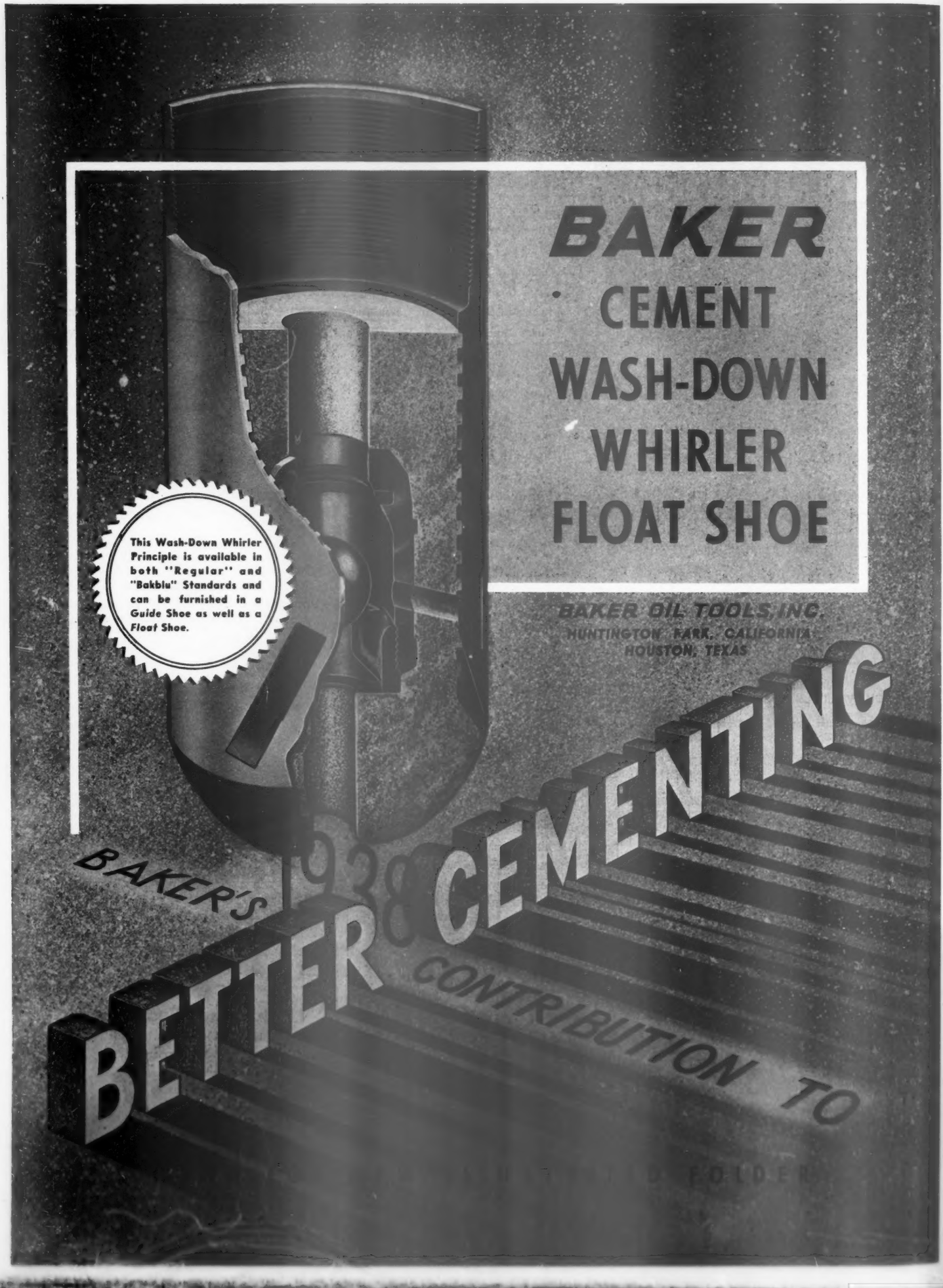
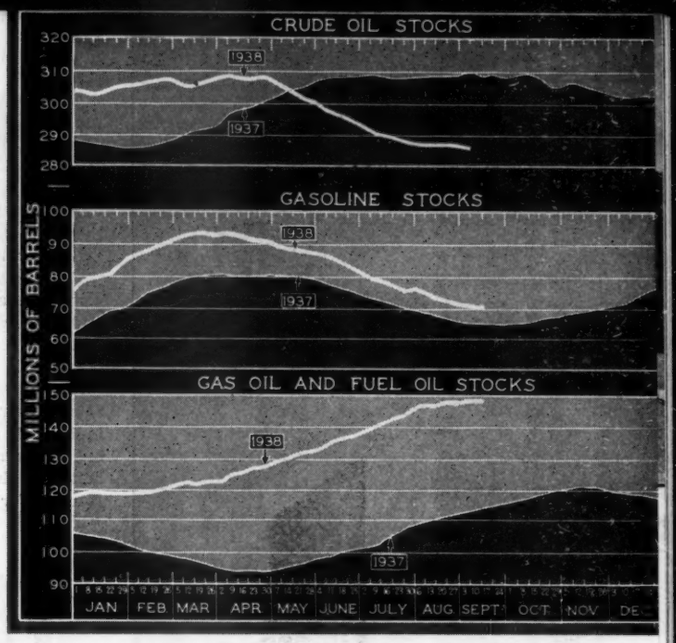

BAKER
CEMENT
WASH-DOWN
WHIRLER
FLOAT SHOE
This Wash-Down Whirler Principle is available in both "Regular" and "Bakbiu" Standards and can be furnished in a Guide Shoe as well as a Float Shoe.
BAKER OIL TOOLS, INC.
HUNTINGTON PARK, CALIFORNIA
HOUSTON, TEXAS
BAKER'S 1938
BETTER CEMENTING
CONTRIBUTION TO

Trends

Oil Output Drops to Lowest Levels in Several Weeks


CRUDE OIL STOCKS
GASOLINE STOCKS
GAS OIL AND FUEL OIL STOCKS
MILLIONS OF BARRELS
1938
1937
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DE

A REDUCTION of 181,489 barrels daily in Texas crude oil production, reflecting the full effect of the Saturday shutdown program inaugurated September 1, more than offset increases in some of the other states, so that national crude output last week was the lowest since the first week in July. It is expected that total output will continue at approximately last week's levels over the remainder of the month.

CRUDE PRODUCTION *3,207,919 barrels daily average — down 146,072. One year ago 3,626,129 barrels.*

CRUDE STOCKS *284,919,000 barrels as of September 3—down 110,000. One year ago—310,417,000 barrels.*

GASOLINE STOCKS *70,860,000 barrels as of September 10—up 346,000. One year ago—66,456,000 barrels.*

GAS AND FUEL OIL STOCKS *149,104,000 barrels as of September 10—up 1,458,000. One year ago—114,666,000 barrels.*

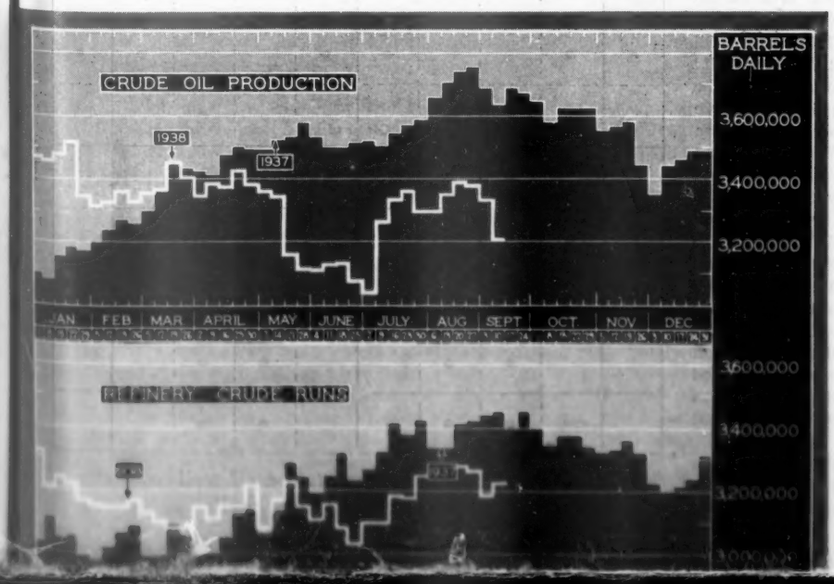
REFINERY RUNS *3,235,000 barrels daily week ending September 10—up 40,000. One year ago 3,455,000 barrels.*

Considered as a unit, United States crude output is now 200,000 barrels less than total export and domestic demands, and continued heavy withdrawals from aboveground crude storage are in prospect. The crude situation, however, does have spots where conditions are unsatisfactory and where adjustments will be necessary from time to time if more serious difficulties are to be avoided. The steadily increasing production of Illinois, which last week reached 78,000 barrels daily, is a direct threat to operations in Kansas and Oklahoma. Coming at this season of the year, any increase in Illinois production means reduced crude markets for other areas, particularly the Mid-Continent. Predictions are heard that Illinois' output will reach 100,000 barrels daily within the next few weeks, provided a curtailment program is not made effective.

The filing of a suit in Texas questioning the legality of well potentials in East Texas as a basis for allowables is considered important as another indication of possible weakness in the application of conservation regulations. There are students of the oil industry, who, while in entire sympathy with the conservation efforts of individual states, question the legality of some acts of enforcement, not only in Texas, but other states. They incline to the belief that the ironing out of these conditions is the most important long-range problem confronting the industry at this time.

The Bureau of Mines (see page 39 this issue) covering July operations in detail explains some of the market developments that took place during that month. A disappointing domestic demand for most of the refined products—the most important of which was a 6 per cent decline in gasoline demand compared with July, 1937—detracts somewhat from the strong demand situation shown for the first six months of this year. For the first time this year the accumulative data show domestic gasoline demand running behind 1937. Fortunately, continued heavy exports of gasoline gave the industry a 2 per cent gain in total demand for the seven-month period ending August 1.

A large decline in kerosene exports in July contributed to the statistical situation which on August 1 found stocks nearly 40 per cent greater than on the same date a year before.



DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 10, 1938	Bur. Mines Sept. est.	Sept. state allowables	Sept. 3, 1938
Oklahoma City	107,125	.....	.....	95,925
Fitts	38,850	.....	.....	36,900
Remainder of state	301,525	.....	.....	299,575
Total Oklahoma	447,500	528,300	428,000	432,400
East Texas	368,349	.....	.....	440,787
West Texas	186,350	.....	.....	219,629
North Central Texas	97,200	.....	.....	104,736
Texas Panhandle	61,298	.....	.....	72,618
East Central Texas	90,850	.....	.....	96,539
Gulf Coast Texas	313,998	.....	.....	350,596
Southwest Texas	92,600	.....	.....	107,229
Total Texas	1,210,645	1,398,600	1,233,248	1,392,134
North Louisiana	80,330	.....	.....	78,845
Gulf Coast Louisiana	190,750	.....	.....	189,134
Total Louisiana	271,080	255,300	260,260	267,979
California	665,900	638,300	610,000	651,750
Kansas	154,300	168,000	165,000	161,200
Arkansas	58,355	53,700	.....	56,920
Illinois	77,947	49,000	.....	71,160
Michigan	51,192	57,000	.....	49,698
Eastern fields	95,100	100,300	.....	93,000
New Mexico	107,130	111,600	106,000	106,880
Rocky Mountain area	68,770	84,200	.....	70,870
Total United States	3,207,919	3,444,300	.....	3,353,991